The SIGHT-SAVING CLASS EXCHANGE

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A SURVEY OF SIGHT-SAVING CLASSES IN THE PUBLIC SCHOOLS OF THE UNITED STATES

EDWARD T. MYERS, PH.D.

ISSUED BY
THE NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS, INC.
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AMERICAN FOUNDATION
FOR THE BLIND INC.

THE SIGHT-SAVING CLASS EXCHANGE

PUBLISHED IN THE INTERESTS OF ALL TEACHERS
WHO DESIRE TO GIVE AND TO RECEIVE HELP
THROUGH THE EXCHANGE OF IDEAS

A Survey of Sight-saving Classes in the Public Schools of the United States

EDWARD T. MYERS, PH.D.

The National Society for the Prevention of Blindness
370 Seventh Avenue, New York, N. Y.

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TABLE OF CONTENTS

I

PAGE

INTRODUCTION

1. Reason for This Study 9
2. Brief History of the Sight-Saving Class Movement 10
3. Limitation and Scope of the Survey 12
4. Locating Sight-Saving Classes 14
5. How Ratios Between Number of Classes and Total School Enrollments Were Determined 14
6. Construction of a Questionnaire for Pupil Data 16
7. Construction of a Questionnaire for Teacher Data 18
8. Distribution of Questionnaires 18

II

GENERAL DATA CONCERNING SIGHT-SAVING CLASSES

1. Location of Classes on December 31, 1928 22
2. Ratios of Number of Sight-Saving Classes to Total School Enrollment in the 21 States Which Had Established Classes Prior to December 31, 1928 22
3. Estimated Number of Classes That Would Establish the Two Most Commonly Accepted Ratios of Number of Classes to Total School Enrollment in the District of Columbia and the 27 States in Which No Sight-Saving Classes Were Found Prior to December 31, 1928 23
4. Ratios of Number of Sight-Saving Classes to Total School Enrollment in 87 Cities Which Had Established Sight-Saving Classes Prior to December 31, 1928 25
5. Percentages of Cities of Different Sizes Equalling or Exceeding the Two Most Commonly Used Ratios Between the Number of Sight-Saving Classes and the Total School Enrollment 29
6. Conclusions Based on Data Recorded in Sections 2 to 5, Inclusive 29
7. Standards of Admission Established by Certain Ophthalmologists 31
8. Standards of Admission for Certain Communities 34
9. Variations in Admission Standards 36
10. Tentative Guide for Standard of Admission 37
11. Typical Procedures in Locating Children for Sight-Saving Classes 38

Editor's Note.—Since this is a thesis in education presented to the faculty of the graduate school of the University of Pennsylvania for the degree of Doctor of Philosophy it was necessary to print it in smaller type than generally used by the National Society in order to meet the requirements of the University.

III

PAGE

CLASSES INCLUDED IN THIS SURVEY AND DATA CONCERNING THE PUPILS ENROLLED IN THEM

1. Classes Included in This Survey 40
2. Sex of Children Included in the Survey 40
3. Classification of Sight-Saving Pupils by Race 42
4. Place of Birth of Child, Father and Mother 42
5. General Health of Sight-Saving Class Pupils 43
6. Physical Handicaps Other Than Eye Defects 44
7. Specific Eye Defects of 2,771 Children in Sight-Saving Classes 45
8. Number of Children Wearing and Not Wearing Glasses 56
9. Changes in Visual Acuity While in Sight-Saving Classes 56
10. Distribution of 709 Children According to Intelligence Quotients 57
11. Distribution of 1,986 Children According to Teachers' Judgment as to Mentality 60
12. Ages of Children at the Time They Entered Sight-Saving Classes 62
13. Grades in Which Children Were Enrolled at the Time They Entered Sight-Saving Classes 64
14. Length of Time 2,790 Pupils Had Been Enrolled in Sight-Saving Classes up to Time of This Survey 65
15. Number of Children and Number of Grades Found in Each Sight-Saving Class 66
16. Distribution of 2,798 Pupils According to Age at the Time of This Survey 69
17. Enrollment of 2,800 Sight-Saving Class Children By Grades 69
18. Age-Grade Tabulations of 2,013 Children at the Time They Entered Sight-Saving Classes and at the Time of This Study 69
19. Mentality Groupings of the 282 Children Who Moved from Normal Age to Over-Age, or Vice-Versa 74
20. Variations in Age-Grade Changes for Certain Different Communities 76
21. Promotion Rates for 2,013 Children in Sight-Saving Classes 77
22. Comparison of Promotion Rates Before and Since Entering Sight-Saving Classes for 155 Children 77
23. Best and Poorest Subjects of Sight-Saving Pupils 78
24. Home Visits Recorded for 2,772 Children 79
25. Distribution of 2,828 Children According to Teachers' Judgments as to the Financial Status of Children's Families 79
26. Number of Families of Sight-Saving Pupils Aided by Social or Charitable Organizations 81
27. Miscellaneous Items 81

IV

PAGE

TRAINING AND EXPERIENCE OF SIGHT-SAVING CLASS TEACHERS

1. Introduction 82
2. Training of 227 Sight-Saving Teachers 82
3. Institutions at Which Teachers Had Taken Sight-Saving Courses 82
4. Length of Service of 216 Teachers in Sight-Saving Classes 83
5. Years of Teaching Experience of 210 Teachers Prior to Appointment to Sight-Saving Positions 83
6. Teaching Experience in Other Types of Special Classes 84
7. Courses Taken by 128 Teachers Dealing with Any Special Class Work 85
8. Grades in Which 209 Teachers Had Had Some Teaching Experience 87
9. Number of Different Grades in Which 209 Sight-Saving Teachers Had Taught 87

V

A BRIEF SUMMARY OF THE SURVEY 88

BIBLIOGRAPHY 95

APPENDIX A. The Original Child Information Sheet 99
B. The Revised Child Information Sheet 100
C. The Original Teacher Information Sheet 101
D. The Revised Teacher Information Sheet 102

ADDENDA 103

TABLES

		PAGE
I	Number of Sight-Saving Classes in Each State, 1919–1928	12
II	Number of Sight-Saving Classes in Cities and States and Their Enrollments by States, December 31, 1928	19
III	Ratio of Sight-Saving Classes to Total School Enrollment in 21 States Having Sight-Saving Classes in 1928	23
IV	Number of Sight-Saving Classes Which Would Make Ratio of One Class of 16 Pupils to 8,000 School Enrollment and One Class to 16,000 School Enrollment in 27 States Having No Sight-Saving Classes, December, 1928	24
V	Ratios of Sight-Saving Classes to Total School Enrollment in 42 Cities of 100,000 or More Population	26
VI	Ratios of Sight-Saving Classes to Total School Enrollment in 30 Cities of from 30,000 to 100,000 Population	27
VII	Ratios of Sight-Saving Classes to Total School Enrollment for 10 Cities of 10,000 to 30,000 Population	28
VIII	Percentages of Cities of Different Sizes Equalling or Exceeding the Two Most Commonly Used Ratios Between Sight-Saving Classes and School Enrollment	29
IX	Number and Location of 213 Classes from Which Child Information Sheets Were Received	41
X	Sex of Pupils Enrolled in Sight-Saving Classes	42
XI	General Health of Sight-Saving Pupils	44
XII	Specific Eye Defects of 2,771 Children in Sight-Saving Classes	46
XIII	Changes in Visual Acuity of 1,751 Pupils	57
XIV	Classification of 709 Pupils According to Intelligence Quotient	58
XV	Classification of 1,986 Pupils According to Teachers' Judgment as to Mentality	60
XVI	Ages at Which 2,764 Children Entered Sight-Saving Classes	63
XVII	Classification of 2,772 Pupils by Grades at the Time They Entered Sight-Saving Classes	64
XVIII	Length of Time Spent in Sight-Saving Classes by 2,790 Pupils	65
XIX	Classification of 158 Classes Which Promote Semi-annually, According to Size and Number of Grades	67

PAGE

XX Classification of 34 Classes, Which Promote Annually, According to Size and Number of Grades 68

XXI Classification of 2,798 Pupils According to Age at the Time of This Survey 70

XXII Grades in Which 2,800 Pupils Were Enrolled at the Time of This Survey 70

XXIII Age-Grade Tabulation of 2,013 Pupils at the Time They Entered Sight-Saving Classes 71

XXIV Age-Grade Tabulation of 2,013 Pupils at the Time of This Survey 72

XXV Distribution by Intelligence Quotients and Teachers' Judgments of 90 Children Over-Age on Entering Sight-Saving Classes, But Not Over-Age at the Time of This Survey 75

XXVI Distribution by Intelligence Quotients and Teachers' Judgments of 192 Children Not Over-Age When They Entered Sight-Saving Classes, But Over-Age at the Time of This Study 75

XXVII Summaries of Age-Grade Tabulations for Certain Communities 76

XXVIII Best and Poorest Subjects of Certain Sight-Saving Pupils 79

XXIX 2,828 Children Grouped According to Family Financial Status 80

XXX Length of Service in Sight-Saving Classes of 216 Teachers 83

XXXI Years of Teaching Service Prior to Sight-Saving Class Teaching of 201 Teachers 84

XXXII Other Types of Special Classes Taught by 54 Sight-Saving Teachers .. 85

XXXIII Courses Taken by 128 Teachers Dealing with Special Classes in General 86

XXXIV Grades in Which 209 Teachers Had Taught 87

XXXV Number of Different Grades Taught by 209 Teachers 87

LIST OF FIGURES

1. Growth in Number of Sight-Saving Classes 1913–1928 13

2. Percentages of 2,803 Children in Each Health Group 45

3. Distribution of 709 Pupils According to I. Q. 59

4. Distribution of Teachers' Judgments as to the Mentality of 1,986 Children 61

5. Financial Status of the Families of 2,828 Children 80

FOREWORD

A considerable part of this survey was made from data recorded on information sheets by some two hundred twenty teachers of sight-saving classes. Without their co-operation, it would have been impossible to make the study. The completing of these forms required much time and effort. I am grateful to the teachers for their help. In communities where many sight-saving classes existed, the supervisors gave much of their time and energy in collecting the needed data. In particular, I am indebted to the following supervisors: Miss Frances Blend, Los Angeles; Miss Ida E. Ridgeway, State of Massachusetts; Miss Harriet Haley, Boston; Miss Gladys Dunlop, Detroit; Mrs. Cordelia Creswell, Grand Rapids; Mr. George F. Meyer, Minneapolis; Mr. John P. Curtis, Chicago; Miss Frances Moscrip, New York City.

The co-operation of the National Society for the Prevention of Blindness through its Associate Director, Mrs. Winifred Hathaway, and its Medical Director, Dr. B. Franklin Royer, was invaluable.

I am also indebted to Mr. Robert Irwin and Dr. O. H. Burritt of the American Foundation for the Blind, Dr. Oliver P. Cornman, Associate Superintendent of the Philadelphia Public Schools, and to the members of my Committee, Professor Wren Jones Grinstead and Professor William Ash. For the kind leadership of my advisor and committee chairman, Professor Francis M. Garver, I am indeed most grateful.

I

Introduction

1. *The Reason for This Study*

Various names have been given, at different times and in different places, to classes organized in the public schools for children not blind, but visually handicapped to such an extent that special educational procedure seemed necessary. In the United States, the general development in terminology appears to have been,—"semi-blind," "semi-sighted," "conservation of vision" and, finally, "sight-saving." The last two terms are now most commonly used. The following definition fits these special classes, no matter by what terms they are designated:

"A sight-saving class is a special class maintained to educate pupils whose sight does not permit them to do the work of the regular grades, or who attempt it only at the expense of their already limited sight."*

The present study was an outgrowth of the interest which developed during two and a half years of supervisory work with four sight-saving classes, located in the Columbus School, Philadelphia.

In 1927, a brief survey of Philadelphia's 13 classes was made. It was not published, but its conclusions appeared in an issue of *The Sight-Saving Class Exchange*.† The Philadelphia survey led to a quest for similar studies in other parts of the country. While there was considerable literature on the subject of sight-saving classes, as may be noted in the appended bibliography, there had been little done of local, state or national survey nature. Hadley‡ presented considerable survey material for the State of Ohio and

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Note: The number at the end of each foot-note reference will also appear in the Bibliography, where the complete title will be found.

* Hadley, Hazel C. *Sight-Saving Classes in the Public Schools Presenting the Ohio Plan.* p. 5. (1)

† Myers, Edward T. "Survey of Sight-Saving Classes in Philadelphia." *The Sight-Saving Class Exchange.* (2)

‡ Hadley, Hazel C. *Sight-Saving Classes in the Public Schools Presenting the Ohio Plan.* (1)

Newmayer* devoted some space to similar material for Philadelphia. A search for surveys, national in scope, failed to reveal any study similar to the one presented here. The present study was made because it was felt that a national survey would be of value to those of the teaching profession already engaged in sight-saving class work and to educators in general.

In discussing the purposes of sight-saving classes, Irwin† stated:

"Sight-saving class departments have three fairly definite aims: first, to instruct the pupils with the minimum of eyestrain; second, to teach them to conserve the vision they possess; and third, to provide such vocational guidance and, if necessary, vocational training as will enable them to fill the most useful places in the community their powers will permit."

To provide the special facilities necessary to accomplish the aims stated in the quotation above, there had been established in December, 1928, 319 sight-saving classes in the public schools of the United States. This represented a considerable growth from the first class organized in Boston in 1913. The movement in America was an outgrowth of the development of classes for visually handicapped children in England.

2. *Brief History*

"About 1889, Dr. J. H. Bell, surgeon of the Bradford Royal Eye and Ear Hospital, England, examined refraction of many children in a school at North Bierley and concluded that myopes needed special educational provision."‡

Referring to children with defective visual acuity, James Kerr§ wrote:

"The rational treatment for most of these children should rather be an educational modification which avoids the necessity for glasses. There is a considerable number of children with permanently damaged or diseased conditions who are not blind, and not ever likely to benefit by the training as given at blind schools, who yet may be actually harmed by the ordinary school education.

"Children with diminished visual acuity seen in cases with considerable corneal opacities, with chronically recurring phlyctenulæ with interstitial keratitis, old choroiditis, high myopia, congenital cataract, congenital absence of iris, some

* Newmayer, S. Weir. "Survey of the Semi-Blind School Children." (3)

† Irwin, R. W. "Sight-Saving Classes in Public Schools." p. 16. (4)

‡ Kerr, James. *School Vision and the Myopic Scholar.* p. 14–15. (5)

§ Ibid.; p. 14.

albinos; children with nystagmus. This group is probably as large a group in totality as that of the blind, and from the results to be obtained, much more worth while educating. Some are in blind schools, some in ordinary schools and others sometimes away for weeks or months under medical certificates, sometimes a short time in school. Special school classes with modified tasks are required for these children, the literary element being eliminated from their work as far as possible, and attention given to fit them for tasks in which vision is not chiefly involved, but yet of subsidiary use."

M. Bishop Harman,* at the International School Hygiene Congress in London in 1907, discussed this subject. The result was the establishment of a myope class in the Boundary Lane School, London, in January, 1908. The whole British system developed from this beginning. Since most of the original members of the class were near-sighted, and since the agitation for special education for high myopes had led to the organization of this class, the name "myope class" was established in England.

It happened that the British Elementary Education (Blind and Deaf) Act, 1893, gave as a definition of blindness: "The expression blindness means too blind to be able to read the ordinary schoolbooks used by children." Because of this definition classes for children not blind, but with defective vision necessitating special educational procedure, were able to secure grants as blind scholars.

"In 1910, Mr. Edward E. Allen, Director of Perkins Institution, then located in South Boston, Massachusetts, brought to the Massachusetts Commission for the Blind an account of the Myope Classes of London. The Commission at once presented to the School Committee of Boston the advisability of making such provision for the low-visioned children of their city." †

As an outcome of this suggestion, Boston established the first sight-saving class in the United States in April, 1913. Miss Helen L. Smith was its first teacher. In September of the same year, Mr. Robert B. Irwin, now Director of the Bureau of Research and Education of the American Foundation for the Blind, organized a sight-saving class in Cleveland, Ohio. In a short time, classes were

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* Ibid.; p. 15.

† Smith, Helen L. "Pioneer Work in Sight-Saving." *The Sight-Saving Class Exchange.* (6)

organized in Cincinnati, Toledo and other cities in Ohio, as well as in several cities in Massachusetts and in New York City.

The National Society for the Prevention of Blindness makes an annual survey of the number of sight-saving classes in the United States. Its first survey was made in 1919, and its most recent one in 1928. The number of classes each year in each state, according to the data gathered in these surveys, is shown in Table I below. There was an increase from 74 classes in nine states in 1919, to 319 classes in 21 states in 1928.

TABLE I

NUMBER OF SIGHT-SAVING CLASSES IN EACH STATE, 1919–1928

STATES	DATES									
	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
California				1	1	2	5	7	10	15
Connecticut	1	1	1	1	1	1	2	3	3	3
Georgia								1	1	1
Illinois	1	1	5	5	6	9	13	14	20	24
Indiana										1
Iowa								1	1	1
Louisiana			2	2	2	2	3	4	4	4
Maryland								1	2	2
Massachusetts	12	18	18	20	21	23	25	27	28	31
Michigan	6	8	14	15	21	25	26	30	33	35
Minnesota	3	4	8	12	15	16	18	17	19	17
Missouri					2	1	2	4	6	6
Nebraska										1
New Jersey					1	4	4	4	4	5
New York	23	27	34	39	56	61	66	72	77	85
Ohio	21	21	26	31	36	40	48	55	57	58
Pennsylvania	1	4	9	12	13	13	13	13	13	13
Rhode Island										1
Virginia								2	2	4
Washington		1	1	2	2	4	4	4	8	9
Wisconsin	6	6	6	4	4	3	4	4	4	3
Total classes	74	91	124	144	181	204	23	263	292	319
Total states	9	10	11	12	14	14	14	18	18	21

The increase in number of sight-saving classes from 1913 to 1928 is shown graphically in Figure 1, page 13.

3. *Limitation and Scope of the Survey*

A careful study of the available literature on sight-saving classes, correspondence with organizations interested in the conservation of

vision, and with directors of special education, did not disclose any institutions established to care for children who were not blind but were so seriously handicapped visually as to require special educational facilities. These special facilities were found only in sight-saving classes. The present study was limited to the sight-saving classes in the public schools of the United States.

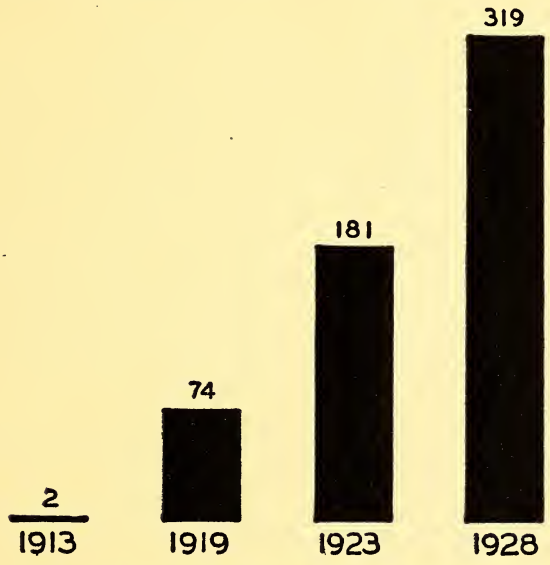

Fig. 1. Growth in Number of Sight-Saving Classes, 1913–1928

The topics considered in this survey group themselves under three headings, as follows:

a. General Data Concerning the Classes.
b. Information About the Children Enrolled in the Classes.
c. Information About the Teachers of Sight-Saving Classes.

Chapters II, III and IV will be devoted to each of these headings, respectively. In order that the three chapters might be confined, as nearly as possible, to the data themselves, some details of the method of procedure in obtaining and compiling certain information, are included in the present chapter.

The following four topics are included under general data concerning the classes:

1. Location of Sight-Saving Classes in the United States.
2. Ratio of Number of Classes to Total School Enrollment in Various States and Cities.
3. Standards of Admission to Sight-Saving Classes.
4. Procedures in Locating Prospective Pupils for Enrollment in Sight-Saving Classes.

4. *Locating Sight-Saving Classes*

Sight-saving class literature and correspondence with special class directors and supervisors failed to disclose any classes which were not included in the annual survey of the National Society for the Prevention of Blindness, for December, 1928. It was decided, therefore, to use the 319 classes listed in that survey as the most recent and most complete available data. The names of the directors and supervisors of these classes were secured from the National Society. The exact location of the classes and much of the data concerning them were obtained directly from the directors and supervisors who co-operated in the study.

5. *How Ratios Between Number of Classes and Total School Enrollments Were Determined*

From experience gained in communities which had established sight-saving classes, attempts had been made to ascertain the approximate ratio that was apt to exist between the number of pupils who were likely to need sight-saving class instruction and the total school enrollment. Royer* stated:

"In giving consideration to the various groups referred to, experience would indicate that in many communities the proportion of pupils likely to profit by sight-saving class assignment would reach one to every 500 on the school register. In some communities, higher proportions have been found suitable for this sort of assignment. In London where, under the wise guidance of a competent ophthalmologist, they have had a long experience in this work, Dr. James Kerr says at least one of every one thousand on the school register, needs to be assigned to special sight conservation classes. Dr. Newmayer, in a Philadelphia study recently published, says one in one thousand."

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* Royer, B. Franklin. "Constructive Program for Sight-Saving Classes in Pennsylvania." *Pennsylvania School Journal.* (7)

The two ratios mentioned in this quotation, one sight-saving class pupil to every 500 on the school register, and one sight-saving class pupil to every 1,000 total school enrollment are found very frequently in sight-saving class literature. To equal the first of these ratios, a community would need one sight-saving class of 16 pupils* for each 8,000 total school enrollment. To equal the second ratio, a community would need one class of 16 pupils for each 16,000 total school enrollment.

In order to find the ratio of the number of sight-saving classes to the total school enrollment in each state, the following information was needed:

a. The total number of sight-saving classes in each state.
b. The total school enrollment of each state.

Since the data concerning the number of sight-saving classes in each state was as of December, 1928, it was desired to obtain total school enrollments on a date as near 1928 as was available. These data should come from the same source for all states. It was not possible to secure reports of State Superintendents covering exactly the same period of time. The latest usable information was found in Table 4, "Statistics of State School Systems 1925–26," Bulletin No. 39, Bureau of Education, Department of the Interior, 1927.

Having the two figures, the number of classes and the total school enrollment in each state, the ratio existing between the two was found by dividing the number of classes into the total school enrollment. For example, California had 15 classes in 1928, her total school enrollment in 1925–26 was 1,016,473. The ratio between the number of classes and the total school enrollment was found by dividing 15 into 1,016,473. The quotient, 67,765, is the second part of the ratio. Thus, the ratio for the State of California was 1 to 67,765, or one sight-saving class to each 67,765 children enrolled. It is unfortunate that the total school enrollments were not obtainable for 1928. However, the changes in school populations between 1925 and 1928 were probably not so great as to alter considerably the ratios given in this study.

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* A class of 16 pupils was arbitrarily selected to make the estimated number of classes conservative. The median number of pupils per class was 15.4, as may be noted on page 67.

To ascertain the number of classes of 16 pupils each state would have if the ratio between number of classes and total school enrollment were 1 to 8,000, the total school population of each state was divided by 8,000. For example, California, with 1,016,473 enrollment, to have the above ratio would require 127 classes. To have a ratio of 1 to 16,000, California would require 64 classes.

The same procedure was used in finding the ratios of number of classes to total school enrollment for all states and cities. For the cities, the latest usable data on total school enrollments were taken from Table 6, "Statistics of City School Systems," Bulletin 32, Bureau of Education, Department of the Interior, 1928.

Tables showing the ratios that existed between the number of sight-saving classes and the total school enrollment will be found and discussed in Chapter II.

6. *Construction of a Questionnaire for Pupil Data*

Because the data concerning each pupil and teacher were so detailed, and because the classes were located in so many different places, the questionnaire method was used in collecting the facts. The weaknesses and shortcomings of this method were fully realized. Due consideration will be given to these weaknesses and shortcomings later, wherever the data are compiled and discussed. The Philadelphia survey previously referred to on page 9, was a questionnaire study. That study had given some idea of what information might be obtained. The following items were decided upon as the ones significant and valid enough to be included in this study:

PHYSICAL:

- Sex
- Race
- Date of Birth
- Birthplace of Child, Father, Mother
- General Health
- Other Physical Handicaps
- Specific Eye Defects
- Wearing or Not Wearing Glasses
- Vision—at Two Different Examination Periods Wherever Possible

MENTAL:

Intelligence Quotient (where child had been examined by a psychologist)
Teacher's Judgment as to Mentality (where child had not been examined by a psychologist)

SCHOLASTIC:

Date of Entrance into Sight-Saving Class
School Grade at Entrance into Sight-Saving Class
Present School Grade
Best School Subject
Poorest School Subject

SOCIAL:

Home Visits by Teacher
Financial Status of Child's Family
Whether or Not Aid Is Being Given by a Charitable or Social Organization

MISCELLANEOUS:

Any Other Items Which Teachers Felt Might Be of Value or Interest

The items listed above were incorporated in a questionnaire called a "Child Information Sheet."* This form was constructed with the aid of a number of sight-saving teachers. It was submitted to and criticized by a Seminar Group in the Graduate School of the University of Pennsylvania. After additions and corrections were made by this group and after a "try-out" with Philadelphia's 13 classes, it was decided that the forms were suitable for use. Before the forms were sent to Chicago, a revision† was made to include a request for information concerning the date on which the child had entered school. They were also changed to omit the request for "Other Serious Physical Handicaps" and to ask instead for a record of "Yes" or "No" to the question, "Has the child any other serious physical handicap?" The reasons for the revision will be given where the data are discussed. No compilations were made of the items which appeared on the original information sheet but did not appear on the revised form.

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* A sample copy of the "Child Information Sheet," used for all the children included in the study except those in Chicago, will be found in Appendix A.

† The revised "Child Information Sheet" will be found in Appendix B.

7. *Construction of a Questionnaire for Teacher Data*

The same procedure used in the construction of the "Child Information Sheet" was followed in making a form for the teacher data. The following items were included:

TRAINING:

- Normal School Graduate
  - Length of Course
  - Name and Location of School
- College Graduate
  - Degree
  - College
  - If not a College Graduate, Have You Taken Any College Courses?
  - Number of Semester Hours
  - Courses Dealing Specifically with Sight-Saving Classes
  - Institutions Giving These Courses
  - Any Courses Dealing With Special Class Work

EXPERIENCE:

- Length of Service in Sight-Saving Classes
- Experience in Other Special Class Work
  - Type of Class
  - Length of Service
- Length of Service as a Teacher Before Teaching Sight-Saving Class
- Grades Taught

MISCELLANEOUS:

- Any other Items of Information the Teachers Cared to Give

The "Teacher Information Sheet"* was used for all the teachers included in the study, except fourteen in Cleveland, twenty-three in Chicago and eleven in Philadelphia. A revised† form was used for these teachers. From experience gained up to the date of sending the forms to these three cities, it had been discovered that certain items might readily be omitted.

8. *Distribution of Questionnaires*

At the time the present study began, there were 292 classes in 80 communities in 18 states. The directors or supervisors of all these

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* A copy of the original "Teacher Information Sheet" will be found in Appendix C.

† The revised "Teacher Information Sheet" will be found in Appendix D.

classes were requested to co-operate in the survey. The co-operation offered by the officials who replied, took the following forms:

a. Some requested that blank forms, in sufficient number for the pupils and teachers in their charge, be sent directly to the office of the supervisor. These supervisors distributed the forms, collected and returned them.

b. Another group of supervisors sent the names and addresses of teachers with permission to mail the forms directly to the teachers. These forms were completed and returned by the teachers.

c. A third group forwarded the names and addresses of teachers with permission to request them to co-operate.

Where correspondence with supervisors brought no reply, teachers were approached directly. Their names and addresses had been obtained principally in sight-saving class publications.

TABLE II

NUMBER OF SIGHT-SAVING CLASSES IN CITIES AND STATES AND THEIR ENROLLMENTS BY STATES, DECEMBER 31, 1928

STATE	CITY	NUMBER OF CLASSES IN EACH CITY	NUMBER OF CLASSES IN EACH STATE	NUMBER OF CHILDREN ENROLLED IN EACH STATE
California	Long Beach	1		
	Los Angeles	7		
	Oakland	1		
	Pasadena	2		
	San Diego	1		
	San Francisco	3	15	153
Connecticut	Farmington	1		
	New Britain	1		
	New Haven	1	3	29
Georgia	Atlanta	1	1	14
Illinois	Chicago	24	24	240
Indiana	Gary	1	1	10
Iowa	Des Moines	1	1	16
Louisiana	New Orleans	4	4	49
Maryland	Baltimore	2	2	28
Massachusetts	Boston	13		
	Brockton	1		
	Cambridge	2		

TABLE II (cont'd)

STATE	CITY	NUMBER OF CLASSES IN EACH CITY	NUMBER OF CLASSES IN EACH STATE	NUMBER OF CHILDREN ENROLLED IN EACH STATE
Massachusetts	Chelsea	1		
	Fall River	2		
	Holyoke	1		
	Lowell	1		
	Lynn	1		
	Medford	1		
	New Bedford	2		
	Newton	1		
	Salem	1		
	Springfield	1		
	Somerville	1		
	Worcester	2	31	378
Michigan	Detroit	22		
	Flint	2		
	Grand Rapids	8		
	Highland Park	1		
	Jackson	1		
	Muskegan	1		
	Saginaw	1	36	516
Minnesota	Coleraine	1		
	Duluth	3		
	Hibbing	1		
	Minneapolis	7		
	St. Paul	5	17	173
Missouri	Kansas City	1		
	St. Louis	5	6	84 (estimated)
Nebraska	Omaha	1	1	14 (estimated)
New Jersey	Jersey City	1		
	Newark	2		
	Paterson	2	5	68
New York	Albany	1		
	Binghamton	1		
	Buffalo	3		
	Jamestown	1		
	New York	74		(estimated
	Rochester	3		for New
	Syracuse	2	85	1,430—York City)
Ohio	Akron	1		
	Alliance	1		
	Ashtabula	1		
	Barberton	1		
	Campbell	1		
	Canton	1		

TABLE II (cont'd)

STATE	CITY	NUMBER OF CLASSES IN EACH CITY	NUMBER OF CLASSES IN EACH STATE	NUMBER OF CHILDREN ENROLLED IN EACH STATE
Ohio	Cincinnati	6		
	Cleveland	20		
	Cleveland Heights	1		
	Columbus	2		
	Dayton	3		
	Hamilton	1		
	Lima	1		
	Loraine	1		
	Mansfield	1		
	Middletown	1		
	Norwalk	1		
	Oak Harbor	1		
	Portsmouth	1		
	Sandusky	1		
	Springfield	2		
	Toledo	5		
	Warren	1		
	Youngstown	3	58	900 (estimated)
Pennsylvania	Philadelphia	13	13	153
Rhode Island	Providence	1	1	15
Virginia	Richmond	2		
	Roanoke	1	3	30
Washington	Seattle	7		
	Tacoma	2	9	123
Wisconsin	Milwaukee	2		
	Racine	1	3	42
(TOTAL) 21 states	87 cities	319	319	4,465

1 class in Grand Rapids was located in a Parochial School.
2 classes in St. Louis were located in Parochial Schools.

II

General Data Concerning Sight-Saving Classes

1. *Location of Sight-Saving Classes on December 31, 1928*

On December 31, 1928, there were 319 sight-saving classes in the public schools of the United States. They were located in 87 cities in 21 states. Table II, page 19, gives the location of classes in each state, and in each city.* Table III also gives the number of pupils enrolled in sight-saving classes in each state.

2. *Ratios of Number of Sight-Saving Classes to Total School Enrollment in the 21 States Which Had Established Classes Prior to December 31, 1928*

The ratio between the number of sight-saving classes and total school enrollment, varied a great deal in the 21 states which had established sight-saving classes prior to December, 1928. The variations are shown in column 4, Table III, page 23. The number of classes that would establish the most frequently mentioned ratios is recorded in columns 5 and 6, of the same Table.

Only a few of the facts shown in Table III are given here.

Ohio, with two thirds the total school enrollment of Pennsylvania had four times as many sight-saving classes.

California, with approximately half the total school enrollment of New York, had fewer than one fifth as many classes.

Indiana, with half the total enrollment of Ohio, had but one fifty-eighth as many classes.

Massachusetts, with almost the same enrollment as New Jersey, had more than six times as many classes.

Georgia, with more than half the school enrollment of Illinois, had but one twenty-fourth as many classes. The extreme variation existed between Ohio, with one class for each 21,643 total

* An attempt was made to construct a map of the United States, showing the location of sight-saving classes. This proved impracticable, since in a number of states, notably Massachusetts and Ohio, it proved difficult to place even dots and names of cities, because of the great number of them. There were, for example, 31 classes in 15 localities in Massachusetts and 58 classes in 24 localities in Ohio.

enrollment, and Georgia with one class to each 689,230 total enrollment.

TABLE III

RATIO OF SIGHT-SAVING CLASSES TO TOTAL SCHOOL ENROLLMENT IN 21 STATES WHICH HAD ESTABLISHED SIGHT-SAVING CLASSES PRIOR TO DECEMBER, 1928

1	2*	3	4	5†	6†
STATES	TOTAL ELEMENTARY AND SECONDARY SCHOOL ENROLLMENT	NUMBER SIGHT-SAVING CLASSES DEC. 31, 1928	RATIO OF CLASSES TO TOTAL ENROLLMENT	NUMBER CLASSES TO MAKE RATIO 1 CLASS TO 8000 ENROLLMENT	NUMBER CLASSES TO MAKE RATIO 1 CLASS TO 16,000 ENROLLMENT
California	1,016,473	15	1– 67,765	127	64
Connecticut	320,463	3	1–106,821	40	20
Georgia	689,230	1	1–689,230	86	43
Illinois	1,331,329	24	1– 55,472	166	83
Indiana	635,227	1	1–635,227	80	40
Iowa	556,270	1	1–556,270	70	35
Louisiana	395,007	4	1– 98,702	49	25
Maryland	263,249	2	1–131,625	33	16
Massachusetts	755,832	31	1– 24,381	94	47
Michigan	871,083	36	1– 24,197	109	54
Minnesota	549,899	17	1– 32,347	69	34
Missouri	723,167	6	1–120,528	90	45
Nebraska	326,934	1	1–326,934	41	20
New Jersey	735,146	5	1–147,029	92	46
New York	1,967,447	85	1– 22,877	246	123
Ohio	1,255,323	58	1– 21,643	157	78
Pennsylvania	1,849,163	13	1–142,243	231	116
Rhode Island	111,428	1	1–111,428	14	7
Virginia	551,475	3	1–183,825	69	34
Washington	329,288	9	1– 36,587	41	21
Wisconsin	542,584	3	1–180,861	68	34

* Figures in column 2 from *Statistics of State School Systems*, 1925–26, Bulletin No. 39, Table 4.

† When the total enrollment was divided by 8,000, or by 16,000, and the remainder was one half or more, one class was added to the quotient.

3. *Estimated Number of Classes That Would Establish the Two Most Commonly Accepted Ratios of Number of Sight-Saving Classes to Total School Enrollment in the District of Columbia and the 27 States in Which no Sight-Saving Classes Were Found Prior to December 31, 1928*

The number of classes that would have established a ratio of one class to 8,000 school enrollment, and one class to 16,000 school

enrollment is recorded in Table IV, columns 3 and 4, respectively. While no evidence has been submitted to show that either of the two ratios is scientifically correct, the figures do indicate a fairly accurate estimate of the number of classes that might be expected, based solely upon the experience in communities which appear to have made the most careful surveys of their needs.

TABLE IV

NUMBER OF SIGHT-SAVING CLASSES WHICH WOULD MAKE RATIO OF 1 CLASS OF 16 PUPILS TO 8,000 SCHOOL ENROLLMENT AND 1 CLASS TO 16,000 SCHOOL ENROLLMENT IN 27 STATES HAVING NO SIGHT-SAVING CLASSES—DECEMBER, 1928

STATE	TOTAL ELEMENTARY AND SECONDARY SCHOOL ENROLLMENT *1925–26	NUMBER OF SIGHT-SAVING CLASSES OF 16 PUPILS EACH WHICH WOULD MAKE A RATIO OF:	
		1 CLASS TO 8000 ENROLLMENT	1 CLASS TO 16,000 ENROLLMENT
Alabama	590,405	74	37
Arizona	81,036	10	5
Arkansas	496,927	62	31
Colorado	236,872	30	15
Delaware	39,297	5	2
District of Columbia	73,495	9	5
Florida	342,643	43	21
Idaho	117,656	15	7
Kansas	424,961	53	27
Kentucky	575,482	72	36
Maine	148,596	19	9
Mississippi	572,986	72	36
Montana	116,990	15	7
Nevada	15,614	2	1
New Hampshire	71,785	9	5
New Mexico	87,687	11	5
North Carolina	818,739	102	51
North Dakota	172,818	22	11
Oklahoma	648,946	81	41
Oregon	181,891	23	11
South Carolina	483,269	60	30
South Dakota	164,551	21	10
Tennessee	653,876	82	40
Texas	1,210,127	151	76
Utah	141,788	18	9
Vermont	64,046	8	4
West Virginia	382,830	48	24
Wyoming	50,138	6	3

* Figures in column 2 from *Statistics of State School System, 1925–26*, Bulletin No. 39, Table 4. (8)

4. *Ratios of Number of Sight-Saving Classes to Total School Enrollment in 87 Cities Which Had Established Sight-Saving Classes Prior to December 31, 1928*

In several cases in Table III, page 23, the classes located in certain states were in one or a few cities in those states. The variations in ratios between number of classes and total enrollment were naturally less in cities than in states. The variations, however, were wide in the different cities, and in different communities within the same state. Table III could not show the variations in cities of different sizes. For these reasons, it was decided to record data similar to those found in Table III for each of the 87 cities in which sight-saving classes were organized prior to December 31, 1928. To do this, the cities were divided into groups according to their total populations. The divisions used were: cities of 100,000 or more population; cities of from 30,000 to 100,000 population; cities of from 10,000 to 30,000 population; and cities with less than 10,000 population.

The ratios of number of sight-saving classes to total school enrollment for cities of 100,000 or more population are recorded in Table V, page 26, column 4. The number of classes that would establish the two most commonly accepted ratios is recorded in columns 5 and 6 of the same table.

Column 4 of Table V shows variations among cities similar to those that existed among states. These variations are, of course, less wide in the cities than in the states, in which these cities were located, due to the fact that the total school enrollments are smaller. Only a few of the variations are recorded here.

Detroit, with less than twice the school enrollment of Baltimore, had 11 times as many classes.

Chicago, with about ten times the school enrollment of Jersey City, had 24 times the number of classes.

Boston, with less than twice the pupilage of San Francisco, had four times the number of classes.

Los Angeles, with three times the enrollment of Minneapolis, had the same number of classes.

Philadelphia, with more than twice the enrollment of Boston, had the same number of classes.

The extreme range of ratios was between Cleveland, with one

TABLE V

RATIOS OF SIGHT-SAVING CLASSES TO TOTAL SCHOOL ENROLLMENT IN 42 CITIES OF 100,000 OR MORE POPULATION

CITIES	TOTAL PUBLIC SCHOOL ENROLLMENT*	NO. CLASSES, DEC. 31, 1928	RATIO CLASSES TO TOTAL SCHOOL ENROLLMENT	NO. CLASSES USING 16 TO CLASS, THAT WOULD MAKE RATIO	
				1–8000	1–16000
Los Angeles	220,496	7	1–31,499	28	14
San Francisco	72,398	3	1–24,133	9	4
New Haven	35,107	1	1–35,107	4	2
Atlanta	49,463	1	1–49,463	6	4
Chicago	489,812	24	1–20,409	61	31
Des Moines	30,306	1	1–30,306	4	2
New Orleans	57,995	4	1–14,499	7	4
Baltimore	112,322	2	1–56,161	14	7
Boston	139,648	13	1–10,742	17	9
Cambridge	18,076	2	1– 9,038	2	1
Fall River	19,667	2	1– 9,334	2	1
Lowell	15,494	1	1–15,494	2	1
New Bedford	19,123	2	1– 9,562	2	1
Springfield	26,150	1	1–26,150	3	2
Worcester	36,377	2	1–18,199	5	2
Detroit	211,807	22	1– 9,628	26	13
Grand Rapids	25,638	8	1– 3,205	3	2
Minneapolis	81,562	7	1–11,652	10	5
St. Paul	41,837	5	1– 8,367	5	3
Kansas City	68,173	1	1–68,173	9	4
St. Louis	97,754	5	1–19,551	9	4
Omaha	40,372	1	1–40,372	5	3
Jersey City	49,475	1	1–49,475	6	3
Newark	82,161	2	1–41,081	10	5
Paterson	25,656	2	1–12,828	3	2
Albany	14,561	1	1–14,561	2	1
Buffalo	81,905	3	1–27,302	10	5
New York	1,083,856	74	1–14,646	135	68
Rochester	50,493	3	1–16,831	6	3
Syracuse	30,282	2	1–15,142	4	2
Akron	41,664	1	1–41,664	5	3
Cincinnati	54,972	6	1– 9,162	7	3
Cleveland	165,067	20	1– 8,253	21	10
Columbus	43,670	2	1–21,835	5	3
Dayton	28,069	3	1– 9,356	4	2
Toledo	48,333	5	1– 9,666	6	3
Youngstown	30,708	3	1–10,236	4	2
Philadelphia	298,864	13	1–22,989	37	19
Providence	44,003	1	1–44,003	6	3
Richmond	30,980	2	1–15,490	4	2
Seattle	61,782	7	1– 8,826	8	4
Milwaukee	78,380	2	1–39,190	10	5

* Figures in this column were obtained from *Statistics of City School Systems*, Bulletin No. 32, 1927, Table 6. (9)

class to each 8,253 total school enrollment, and Baltimore with one class to each 56,161 total school enrollment.

TABLE VI

RATIOS OF SIGHT-SAVING CLASSES TO TOTAL SCHOOL ENROLLMENT IN 30 CITIES OF FROM 30,000 TO 100,000 POPULATION

CITIES	TOTAL PUBLIC SCHOOL ENROLLMENT*	NO. OF CLASSES DEC. 31, 1928	RATIO CLASSES TO TOTAL ENROLLMENT	NO. CLASSES THAT WOULD MAKE RATIO WITH AVERAGE OF 16 TO A CLASS:	
				1–8000	1–16000
Long Beach	23,279	1	1–23,279	3	1
Pasadena	17,258	2	1– 9,629	2	2
San Diego	22,896	1	1–22,896	3	1
New Britain	14,525	1	1–14,525	2	1
Gary	17,456	1	1–17,456	2	2
Brockton	11,805	1	1–11,805	1	1
Chelsea	8,756	1	1– 8,756	1	1
Holyoke	8,161	1	1– 8,161	1	1
Lynn	15,874	1	1–15,874	2	1
Medford	8,797	1	1– 8,797	1	1
Newton	10,083	1	1–10,083	1	1
Salem	6,418	1	1– 6,418	1	1
Somerville	15,928	1	1–15,928	2	1
Flint	22,781	1	1–11,391	3	1
Highland Park	10,706	1	1–10,706	1	1
Jackson	8,887	1	1– 8,887	1	1
Muskegan	7,425	1	1– 7,425	1	1
Saginaw	12,922	1	1–12,922	2	1
Duluth	21,351	3	1– 7,117	3	1
Binghamton	12,066	1	1–12,066	2	1
Jamestown	8,608	1	1– 8,608	1	1
Canton	20,999	1	1–20,999	3	1
Hamilton	7,164	1	1– 7,164	1	1
Lima	8,614	1	1– 8,614	1	1
Loraine	8,812	1	1– 8,812	1	1
Portsmouth	9,099	1	1– 9,099	1	1
Springfield	11,677	2	1– 5,839	1	1
Roanoke	13,784	1	1–13,784	2	1
Tacoma	21,414	2	1–10,707	3	1
Racine	11,150	1	1–11,150	1	1
Total		35			

* Figures in this column were obtained from *Statistics of City School Systems*, Bulletin No. 32, 1927. Table 6. (9)

As the sizes of the communities diminish, the possible variations become less. Exactly the same facts as were given for cities of 100,000 or more population in Table V, are recorded for cities

between 30,000 and 100,000 population in Table VI. Twenty-six of the 30 cities included in Table VI had but one sight-saving class. Duluth, with three classes, had three times the number that had been established in Long Beach, San Diego and Flint; all of which had larger school enrollments.

The greatest variation in cities of this class was between Salem, with one class per 6,418 enrollment and Long Beach, with one class per 23,279 enrollment.

No city in the 10,000 to 30,000 population class had a public school population of 8,000. They all, therefore, had exceeded the ratio of one class to 8,000 total enrollment. The variations for these cities are recorded in the last column of Table VII below. Even these cities with their relatively small enrollments, vary from one class to 3,600 children in Campbell, Ohio, to one class in 7,965 in Warren, Ohio.

There were but five cities of less than 10,000 population which had established sight-saving classes. They were: Oakland, California; Farmington, Connecticut; Coleraine, Minnesota; Norwalk, Ohio; and Oak Harbor, Ohio.

TABLE VII

RATIOS OF SIGHT-SAVING CLASSES TO TOTAL SCHOOL ENROLLMENT FOR 10 CITIES OF 10,000 TO 30,000 POPULATION

CITIES	TOTAL SCHOOL ENROLLMENT*	NUMBER OF CLASSES DEC. 31, 1928	RATIO OF CLASSES TO TOTAL SCHOOL ENROLLMENT
Hibbing	6,321	1	1–6,321
Alliance	5,517	1	1–5,517
Ashtabula	4,360	1	1–4,360
Barberton	4,515	1	1–4,515
Campbell	3,600	1	1–3,600
Cleveland Heights	6,804	1	1–6,804
Mansfield	5,587	1	1–5,587
Middletown	5,627	1	1–5,627
Sandusky	4,028	1	1–4,028
Warren	7,965	1	1–7,965

* Figures in this column were obtained from *Statistics of City School Systems*, Bulletin No. 32, 1927. Table 6. (9)

5. *Percentages of Cities of Different Sizes Which Had Equalled or Exceeded the Two Most Commonly Accepted Ratios Between Number of Sight-Saving Classes and Total School Enrollment*

Twenty-seven, or 31.0 per cent, of the 87 cities with sight-saving classes had equalled or exceeded the ratio of one class to each 8,000 school enrollment. In 62, or 71.3 per cent, of the same cities, at least a ratio of one class to each 16,000 school enrollment had been found necessary. The number and percentage of cities, in each population group, which had equalled or exceeded the two ratios, appear in Table VIII.

TABLE VIII

PERCENTAGES OF CITIES OF DIFFERENT SIZES EQUALLING OR EXCEEDING THE TWO MOST COMMONLY USED RATIOS BETWEEN SIGHT-SAVING CLASSES AND SCHOOL ENROLLMENT

NUMBER OF CITIES, ACCORDING TO POPULATION				NUMBER OF CITIES WHOSE CLASSES EQUAL OR EXCEED THE RATIO 1–8000	PERCENTAGE OF CITIES WHOSE CLASSES EQUAL OR EXCEED THE RATIO 1–8000	NUMBER OF CITIES WHOSE CLASSES EQUAL OR EXCEED THE RATIO 1–16,000	PERCENTAGE OF CITIES WHOSE CLASSES EQUAL OR EXCEED THE RATIO 1–16,000
100,000 OR MORE	30,000 TO 100,000	10,000 TO 30,000	LESS THAN 10,000				
42				0	0.0	22	52.0
	30			12	40.0	25	83.4
		10		10	100.0	10	100.0
			5	5	100.0	5	100.0
				27	31.0	62	71.3

According to the United States Census for 1920:

The 42 cities in column 1, Table VIII are 61.8 per cent of the 68 cities of 100,000 population or more.

The 30 cities in column 2, Table VIII are 37.5 per cent of the 80 cities of 30,000 to 100,000 population.

The 10 cities in column 3, Table VIII are 1.9 per cent of the 514 cities of 10,000 to 30,000 population.

The 5 cities in column 4, Table VIII are a fractional part of 1 per cent of cities of less than 10,000 population.

6. *Conclusions Based on Data Recorded in Sections 2 to 5, Inclusive*

The fact that a certain ratio had been found between the number of sight-saving classes and the total school enrollment in one school

system, is no positive indication that exactly the same ratio will, or should, exist in another school system. A number of conditions might explain the existence of certain variations. While no institutions, other than sight-saving classes, for the instruction of children with serious eye defects were located in this investigation, they may have existed. No evidence has been given that the same proportion of visually handicapped children would be found in every locality. Nevertheless, such wide variations in the provisions made for these children in different states and cities as were shown in the preceding sections, make it possible to conclude that certain states and cities have gone much further than others in meeting their needs for these special classes.

There were 27 states in which no sight-saving classes were known to have existed prior to December 31, 1928. Unless provisions other than sight-saving classes were made for the visually handicapped children, it may be assumed that they were either enrolled in regular school grades, were not in school at all, or were in schools for the blind.

More than twice the number of cities with the ratio of one class to each 8,000 enrollment had established the ratio of one class to 16,000 enrollment. This may indicate that the latter proportion is more nearly the correct one, or that many cities had not established as many classes as they needed.

Fifteen cities of less than 30,000 population had organized sight-saving classes. Eleven of these cities were in Ohio; the remaining four were in Minnesota, California, and Connecticut. There were classes in 72 larger cities.

These facts indicate that, while some provision had been made for visually handicapped children in many large communities, the smaller communities had been much less adequately provided for. In this connection, it must be remembered that scattered populations create the necessity for the transportation of pupils over considerable distances. Large cities, however, must often meet a similar problem in transporting children to centrally located classes.

7. *Standards of Admission Established by Certain Ophthalmologists*

Dr. Thomas D. Wood,* as a result of an investigation made in 1922–23, concluded that under the methods of examining children at that time, about 12 per cent of the school children had defective vision. The total number of school children in his investigation having eye defects was 572,525. By far the greater number of these defects were of such a nature that proper refraction would have made special educational facilities unnecessary. With reference to the children with defective vision who should not, or who should be placed in special sight-saving classes, Wood† stated:

"In general, with the exception of children suffering from progressive eye troubles, children with 20/70 vision or over, in the better eye after refraction, or treatment, can usually carry on their work profitably in the regular grade. Children with 20/200 vision or less after correction, or treatment, are considered blind and should be educated as finger readers in a school or class for the blind.

"Children falling between these two extremes, plus all children with progressive eye troubles, should be considered potential candidates for sight-saving classes. Although it is wise to have certain standards for admission, each child must be given individual consideration."

Robert R. Irwin‡ reported the following:

"Description of Eligible Candidates to Sight-Saving Classes Prepared by a Committee of Cincinnati Eye Specialists, of Which Dr. Louis Stricker was Chairman:

"1. Children who cannot read more than 6/21 at distance and who cannot read 2.00 at 20 c.m.

"2. Myopes who have more than five diopters of myopia.

"3. Hyperopes who have symptoms of asthenopia, and who have more than five diopters of hyperopia.

"4. Children who have an astigmatism of more than 3.5 diopters and whose vision cannot be brought up to more than 6/24.

"5. Children with maculae, nebulae, leucomae which interfere with sight and lead to eyestrain.

"NOTE:—It is assumed that these conditions exist after the proper refractions have been made."

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* Wood, Thomas D. *Conserving the Sight of School Children.* Publication 6—National Society for the Prevention of Blindness, 1928, p. 6. (10).

† Ibid., p. 48.

‡ Irwin, R. B. *Sight-Saving Classes in the Public Schools.* Harvard Bulletins in Education. p. 28. (4)

Irwin reports in the same publication the following:

"Description of Cases Indicating Sight-Saving Class Treatment Prepared by Dr. Douglas F. Wood, of Minneapolis, After Some Study of this Subject.

"1. Myopes of eight diopters or more.

"2. Myopes whose vision cannot be brought up to one-half normal vision: 6/12.

"3. Progressive myopia.

"4. Children having macula or leucoma of the cornea; or optic atrophy with vision less than 6/15.

"5. Astigmatism with glasses 6/21 or less.

"6. Hyperopia with more than eight diopters, with symptoms of asthenopia.

"7. Keratitis, in the interstitial type, if the vision remains low after the eye has been quiet for three months, or in persistent recurrent conditions while under treatment.

"8. In congenital cataracts, or secondary cataracts where no acute condition is present, vision 6/15 or less.

"9. Congenital malformations, where the vision is 6/21 or less.

"10. In all chronic diseases of the fundus, where the vision is 6/12 or less."

Royer* gives the following rather complete description of cases he thinks eligible for sight-saving classes:

"Generally speaking, for a tentative guide experience would indicate that a pupil with a high defect of vision and with all correction given for distance that an ophthalmologist thinks wise to give, and still having not more than 20/70 by Snellen chart measurement in the better eye, should be set aside for a very special study by an ophthalmologist as a likely potential candidate for a sight-saving class. This screening will get a large group but will miss some. The downward limit of distant vision is roughly 20/200 in the better eye, pupils with so little vision, of course, being routed to classes for the blind. This eliminates a few more.

"A number of children, however, who would seem to merit special consideration for admission to these classes, will not be reached by this tentative guide alone. Near-sighted children that on several tests show a tendency to become more noticeably or measurably near-sighted must be given ophthalmological consideration for admission to such a class. If the study demonstrates a progressive eye fault, then assignment to a sight-saving class may be imperative. Many ophthalmologists believe that when the best correction available in a near-sighted (myopic) pupil is 20/50 for distant vision or less in the better eye, the child should during the greater part of school life be given the protective advantages of a sight-saving class. There is less chance of the eyeballs stretching to a dangerous condition if safeguarded.

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*Royer, B. Franklin—"Constructive Program for Sight-Saving Classes in Pennsylvania." *Pennsylvania School Journal.* p. 80–83. (7)

"Some school workers, on the advice of experienced ophthalmologists, have advocated that children with hypermetropia (wrongly called far-sightedness) of high degree (five or more diopters), and showing signs of eyestrain while wearing the best obtainable correction for the refractive error, should also be routed to a sight-saving class.

"A considerable number of children suffer with astigmatism (irregular curvature of the cornea or window of the eye) that is not completely correctible by lenses. Where the astigmatism is associated with either myopia or hypermetropia, if the best distant vision obtainable after correction is 20/50 in the better eye, such pupil might better go to the sight-saving class, or at least be routed to the consulting ophthalmologist for careful review to determine the wisdom of such procedure.

"There is another group, the vision-handicapped, from which the sight-saving pupils may be recruited, that might be spoken of as those pupils suffering from congenital eye defects. In this group whether they be of malformation of the globe or pupils, or afflicted with congenital, primary, or secondary cataracts, by careful school examination they would be screened out for reference to the consulting ophthalmologist. The ordinary Snellen distance test should be used and if the best vision obtainable after correction is 20/70 or lower in the better eye, such pupils are better off in the sight-saving class.

"Pupils suffering with disease scars or chronic disease will furnish a certain proportion of the sight-saving pupils. An ophthalmologist practicing in a community where no sight-saving classes are organized will withdraw some such pupils from school. First, those having scars of disease (the technical terms, maculae, nebulae, and leukoma), shutting off good vision, with 20/70 as the best distant vision in the better eye; such pupils may occasionally be assigned to the sight-saving class, not because such vision as they have may degenerate but because the facilities for individual attention are better and the pupil may better keep the class pace in the special class.

"Among those pupils suffering from disease, we find certain sluggish inflammatory conditions where the oculist feels that the pupil in school with only limited use of the eye is hurt much less than in the home without any control; and yet the child with little use of eyes for close work may be securing some valuable education. The child with chronic disease of the eye ground itself (the inside lining of the back part of the eyeball), with best correction to 20/50 or lower, may often on the advice of the ophthalmologist be admitted for months at a time to a sight-saving class.

"Lowering of vision due to atrophy of the optic nerve—that essential nerve pathway between the eye and brain,—whether resulting from a systemic disease such as syphilis, from head injury or from focal infection, must always be treated as a special problem case. For a few of these children that are likely to lose their eyesight, visual education may be given in the sight-saving class until they reach the stage of blindness where schools for the blind will receive them and where teachers

of the blind agree that they may with advantage begin with tactile methods. The school health worker and the ophthalmologist can usually work out these problems, sometimes only after conference with educators of the blind.

"Finally, disposition needs at times to be made of the albino child, the youngster who because of lack of pigment in the eye structure suffers severely from strong light. This sort of eye defect may be better protected by the individual attention likely to be afforded in a sight-saving class than in the regular grade, and the eye is less likely to deteriorate in vision under the eye care provided in sight-saving classes."

While there are some differences in the standards set by these several eye experts, they agree quite generally on the type of child who should be assigned to a sight-saving class.

8. *Standards of Admission for Certain Communities*

The following standards of admission for Massachusetts, New York, Connecticut, Minnesota and Ohio were taken from the records of the National Society for the Prevention of Blindness:

Massachusetts

1. Children suffering from congenital defects, old scars of the cornea, optic nerve atrophy, etc., whose vision cannot be brought to beyond one-third normal.

2. Young children suffering from myopia whose vision cannot be brought up to beyond one-half normal (after the child has become accustomed to glasses), where the correction is three diopters or more. All children suffering from myopia which is progressive, even though glasses may bring the vision up to nearly normal.

3. Children with hyperopia or astigmatism whose vision is 20/100 or less, unless there is decided asthenopia.

4. Children suffering from cataract where the vision is one-half normal, and there is difficulty in accommodation.

New York

1. General standard of 20/50 or less in the better eye, except for myopes whose cases must be considered individually.

Connecticut

All those whose vision in the better eye, cannot, for any reason, be improved beyond 20/50 for distance or Jaeger No. 2 at 13 inches.

The defect in vision may be caused by refractive errors associated with amblyopia, opacities in any of the refractive media, diseases of the fundi or congenital anomalies. Myopes above eight diopters and those with rapidly progressive myopia belong in this class.

Note: It is assumed that vision cannot be improved beyond 20/50 after proper correction of refractive error.

MINNESOTA

General Standards for Admission of Pupils not Totally Blind

1. Myopes of eight diopters or more.
2. Myopes whose vision cannot be brought up to one-half normal vision 20/40.
3. Progressive myopia.
4. Children having macula or leucoma of the cornea: or optic atrophy with vision less than 6/15.
5. Astigmatism with glasses 20/70 or less.
6. Hyperopia with more than eight diopters, with symptoms of asthenopia.
7. Keratitis, in the interstitial type, if the vision remains low after the eye has been quiet for three months, or in persistent recurrent conditions while under treatment.
8. In congenital cataracts, or secondary cataracts where no acute condition is present, vision 20/50 or less.
9. Congenital malformations, where the vision is 20/70 or less.
10. In all chronic diseases of the fundus, where the vision is 20/40 or less.

OHIO

1. Children who cannot read more than 20/70 on a standard Snellen chart in the better eye, or who cannot read no. 2.00 at 35 c.m.
2. Myopes who have more than six diopters of myopia and are under 10 years of age.
3. Children who have three diopters of myopia which are progressive.
4. Hyperopes who have symptoms of asthenopia and whose vision in their best eye falls below 20/70.

5. Children who have an astigmatism of more than three and five-tenths diopters and whose vision cannot be brought up to more than 20/70, in the better eye.

6. Children with corneal opacities whose vision is 20/50 or less in the better eye.

7. Cases of inactive keratitis where vision is 20/50 or less in the better eye.

8. Children having congenital cataracts, secondary cataracts, congenital malformation or fundus lesions where no acute condition is present, with vision of 20/50 or less in better eye.

(A) Any child, who in the oculist's opinion, would benefit by sight-saving training, will be accepted, subject to the suggestions of the oculist for treatment or training.

(B) It is assumed that these conditions exist after the proper refractions have been made.

9. *Variations in Admission Standards*

One hundred ninety-four, or about 61 per cent, of the public school sight-saving classes are in the states whose admission standards have been noted. They may therefore be considered as typical.

An examination of these standards discloses considerable variations among them. In the matter of myopia, for example:

Massachusetts has as a standard three diopters.

Connecticut has as a standard eight diopters.

Ohio has as a standard six diopters and under 10 years of age.

Minnesota has as a standard eight diopters or more, and myopes whose vision cannot be brought up to one-half normal vision 20/40 and progressive myopia.

New York has the statement, "myopes whose cases must be considered individually."

With regard to hyperopia, similar variations can be noted:

Massachusetts has as a standard for admission: Children with hyperopia whose vision is 20/100 or less, unless there is decided asthenopia.

New York and Connecticut do not mention hyperopia specifically.

MINNESOTA has as a standard for admission: Hyperopia with more than eight diopters, with symptoms of asthenopia.

OHIO has as a standard for admission: Hyperopes who have symptoms of asthenopia and whose vision in their best eye falls below 20/70.

From the examples noted, it can be seen that there were considerable differences among the communities regarding the standards of admission to sight-saving classes. Since the number of children enrolled in sight-saving classes depended, to a considerable extent, upon the standards of admission, variations in these standards caused variations in the number of children enrolled and in the number of classes needed in different localities.

10. *Tentative Guide for Standard of Admission*

For the benefit of educational authorities who might contemplate the establishment of sight-saving classes, and as an attempt to create a list of standards that might be of service in diminishing the variations in the standards that have been set up in the communities having these classes, the National Society for the Prevention of Blindness has made the following school guide for finding potential sight-saving class pupils and routing them for ophthalmological opinion:

"1. General Statement. Children having a visual acuity of 20/70 or less in the better eye after proper refraction. In addition, the following are recommended as potential candidates:

"A. Children in elementary schools having four or more diopters of myopia.

"B. Inactive, subsiding (or regressive) cases, such as interstitial or phlyctenular keratitis, optic neuritis, trachoma, etc., in which some irritation may be present, provided the approval of the attending physician is given.

"2. All cases must be considered individually.

"3. Any child who in the opinion of the ophthalmologist would benefit by assignment to a sight-saving class, subject to suggestion for treatment and training by such ophthalmologist, and the acceptance of the educational authorities having charge of such classes.

"4. It is assumed that all the children assigned to sight-saving classes have average normal mentality."

11. *Typical Procedures in Locating Children for Sight-Saving Classes*

Letters requesting the exact procedure in the locating of prospective members of sight-saving classes were sent to supervisors in six cities which had the largest numbers of sight-saving classes. Replies were received from the supervisors of about one-third of all the sight-saving classes. These replies, along with the report made by Hazel C. Hadley,* for Ohio, cover more than one-half of the classes and may fairly be considered as typical.

The chief agencies in locating prospective sight-saving class members were as follows:

1. Class-room teacher
2. School doctor
3. School nurse
4. School principal
5. Parents
6. Clinics, public and private
7. Social agencies
8. Private oculists
9. School oculists

The general procedure was as follows:

At the time of the annual or semi-annual physical examination by the teacher, nurse, doctor or oculist, those children having low vision or detected as having eye defects were noted for further examination. If the later, more careful examination revealed that the child came within the standard set by the community for admission to a sight-saving class, his case was forwarded to the supervisor with a recommendation that he be transferred to such a class.

At times other than the regular physical examination period, children who were discovered by the school doctor, nurse, or teacher as having low vision, children who are constantly complaining of headaches, or of their inability to see the work on the blackboard, or children who constantly failed in school work, were singled out and tested by oculists. In these cases also, recommendation was made to the supervisor who made the transfer from

* Hadley, Hazel C. *Sight-Saving Classes in the Public Schools.* p. 9–10. (1)

a regular grade. Communities having sight-saving classes in their public schools acquainted local oculists and social service agencies with that fact. Some children were brought to the attention of the sight-saving class authorities through these sources.

In a few cases, a parent, being aware of the serious eye condition of a child, brought it to the attention of the school authorities.

The selection of prospective sight-saving class members depended somewhat on the alertness of teachers, school doctors, nurses and principals. Probably the ideal way to insure the most careful selection would be to secure the services of a number of ophthalmologists to examine the eyes of all school children. The selection of prospective sight-saving pupils would then depend on the standards for admission in the community and the number of classes available.

III

Classes Included in This Survey and Data Concerning the Pupils Enrolled in Them

1. *Classes Included in This Survey*

Child Information Sheets, numbering 2,882, were received from the 213 sight-saving classes recorded in Table IX, page 41. This represented a response of 70.1 per cent of the approximate total of 4,087 pupils enrolled at the time the study began.

Every item was not completed on each Child Information Sheet. For that reason, no summary or total for any item will equal 2,882. As the procedure in gathering the data was explained in the Introduction, the present chapter will concern itself chiefly with the results obtained.

2. *Sex of Children Included in the Survey*

Of 2,860 children 1,435, or 50.2 per cent, were boys and 1,425, or 49.8 per cent, were girls. The number of children was, therefore, divided almost evenly between boys and girls. The greatest variation from this even division was found in Minneapolis, where 65.7 per cent of the children enrolled were boys and 34.3 per cent were girls. In Chicago, there was a somewhat similar division: 64 per cent being boys, and 36 per cent being girls. The 1,260 children in New York City divided 45.7 per cent boys and 54.3 per cent girls. This was the deciding factor in making the balance between the total boys and girls almost even.

No attempt was made to account for these variations in local communities, but because of their possible interest to the supervisors in the places concerned, it was decided to give the number and percentage of boys and girls for each city in which there were more than fifty children. This information is recorded for eight cities, and for all the remaining children in Table X, page 42.

TABLE IX

NUMBER AND LOCATION OF 213 CLASSES FROM WHICH CHILD INFORMATION SHEETS WERE RECEIVED

STATE	CITY	NUMBER OF CLASSES	
		CITY	STATE
California	Long Beach	1	
	Los Angeles	7	
	Oakland	1	
	Pasadena	1	
	San Francisco	3	13
Connecticut	New Britain	1	
	New Haven	1	
	Farmington	1	3
Illinois	Chicago	23	23
Maryland	Baltimore	1	1
Massachusetts	Boston	11	
	Brockton	1	
	Chelsea	1	
	Lowell	1	
	Lynn	1	
	New Bedford	2	
	Springfield	1	
	Worcester	2	
	Somerville	1	
	Revere	1	
	Holyoke	1	
	Fall River	2	
	Newton	1	26
Michigan	Detroit	20	
	Highland Park	1	
	Flint	1	
	Grand Rapids	8	
	Jackson	1	31
Minnesota	Minneapolis	7	
	Coleraine	1	
	Duluth	3	
	Hibbing	1	12
Missouri	Kansas City	1	1
New Jersey	Jersey City	1	1
New York	New York	73	
	Albany	1	
	Binghamton	1	
	Buffalo	3	
	Rochester	2	
	Syracuse	1	81
Ohio	Oak Harbor	1	
	Warren	1	
	Cleveland	2	4
Pennsylvania	Philadelphia	13	13
Virginia	Richmond	2	2
Washington	Tacoma	2	2
		Total	213

TABLE X

SEX OF PUPILS ENROLLED IN SIGHT-SAVING CLASSES

CITIES*	SEX		TOTAL	PER CENT	
	MALE	FEMALE		MALE	FEMALE
Philadelphia	69	69	138	50.0	50.0
Boston	51	71	122	41.8	58.2
Detroit	172	132	304	56.6	43.4
Grand Rapids	59	44	103	57.3	42.7
Minneapolis	46	24	70	65.7	34.3
Chicago	128	72	200	64.0	36.0
New York	576	684	1,260	45.7	54.3
Los Angeles	34	36	70	48.6	51.4
All Others	300	293	593	50.6	49.4
Totals	1,435	1,425	2,860	50.2	49.8

* The eight (8) cities recorded are the ones in which there were more than 50 children enrolled in sight-saving classes.

3. *Classification of Sight-Saving Pupils by Race*

Two thousand eight hundred fifty-seven (2,857) pupils were found to be divided racially into the three following groups:

1. WHITE— 2,606 or 91.2 per cent.
2. NEGRO— 234 or 8.2 per cent.
3. MONGOLIAN— 17 or .6 per cent.

All but one of the 17 Mongolian children were in California. (It is interesting to note, in this connection, that in San Francisco there is a sight-saving class composed entirely of Chinese children.)

Since all children who were eligible for membership in sight-saving classes were not enrolled in them, it was impossible to draw any conclusions as to racial tendencies toward serious eye defects in children. This was equally true in the case of classification by birthplaces, to be discussed in the section following.

4. *Place of Birth of Child, Father and Mother*

For the reason stated above, no general conclusions can be drawn from the data compiled concerning the place of birth of the child, father and mother. However, these data may be of interest.

Of the 2,778 sight-saving pupils, 2,598, or 93.5 per cent, were

born in the United States. Of the remaining 180 pupils 126 were born in the following four countries:

Russia, 31
Italy, 39
Canada, 40
Poland, 16

These 126 represent 4.5 per cent of the 2,778 pupils. The other two per cent not shown here were born in 20 other countries.

Of the 2,658 fathers, 1,086, or 40.9 per cent, were born in the United States. One thousand one hundred forty (1,140), or 42.9 per cent, of the fathers were born in the following six countries: Russia, 317; Italy, 455; Austria, 88; Poland, 154; Germany, 60; Canada, 66. The remaining 432, or 16.2 per cent, of fathers not recorded here were born in 44 other countries.

Of the 2,658 mothers, 1,156, or 43.5 per cent, were born in the United States. One thousand sixty-four (1,064), or 40.0 per cent, of the mothers were born in the following six countries: Russia, 283; Italy, 429; Austria, 100; Poland, 147; Germany, 48; and Canada, 57. The remaining 438, or 16.5 per cent, of the mothers not recorded here, were born in 40 other countries.

New York City provided 1,172, or 44.1 per cent, of the data for birthplaces of fathers and mothers. The foreign population of this city influenced the results out of proportion to its percentage.

Outside of the City of New York, the percentage of native born fathers was 53.4, as compared with 40.9 per cent recorded above for all cases. Of the mothers outside New York City, 52.7 per cent were native born as compared with the 40.0 per cent recorded above for all cases.

5. *General Health of Sight-Saving Class Pupils*

The information obtained concerning general health is of a decidedly subjective nature. It would be difficult to accurately define general health. It would require expert medical opinion to make an accurate estimate as to a child's general health. It is doubtful whether such estimates made by physicians were recorded on forms of such a nature that it would have been possible for teachers to forward copies of such records to be compiled in this

survey. The question was asked to get an idea as to what teachers considered the general health of sight-saving class children. The fact that a sight-saving teacher has a small class, and often keeps her children for a considerable length of time, teaching them individually and very often visiting their homes, made her judgment concerning these children rather competent, even though it was subjective.

From these subjective judgments, it appeared that sight-saving class children on the whole presented a rather normal distribution, in so far as health was concerned. Teachers were requested to classify each child's general health as EXCELLENT, GOOD, FAIR, or POOR. The replies for 2,803 children were distributed as shown in Table XI.

TABLE XI

GENERAL HEALTH OF SIGHT-SAVING PUPILS

GENERAL HEALTH	NO. OF CHILDREN	PER CENT
Excellent	425	15.2
Good	1,373	48.9
Fair	715	25.5
Poor	290	10.3

This distribution is shown graphically in Figure 2. From this figure, it can be seen that the distribution is slightly skewed toward the better health side. Since these data were not obtained in a very scientific manner, it can only be stated that, according to the judgments of their teachers, sight-saving pupils showed no great variation in health from what would be expected of any normal group of children.

6. *Physical Handicaps Other Than Eye Defects*

The data received concerning physical handicaps other than eye defects were also subjective. The question was poorly planned in the construction of the questionnaire, in that it was not objective, and was apt to be interpreted differently by different teachers. In the revised Child Information Sheets which were used only in the Chicago classes, this question was changed to simply ask whether or not a child had any other serious physical handicap. Of the 2,882 child information sheets received, only 1,329 replies were

recorded for other physical handicaps. No notation in the space left blank for a reply may or may not have indicated the absence of a physical defect. Of the 1,329 replies, 554, or 41.7 per cent, stated that the child had some physical handicap other than his visual defect. Seven hundred seventy-five (775) replies, or 58.3 per cent, stated that the child had no other physical handicap. Of the handicaps recorded, the most frequently mentioned were: underweight, anaemia, deafness, speech defects, and nervous disorders.

Fig. 2. Percentages of 2,803 Children in Each Health Group

7. *Specific Eye Defects of 2,771 Children in Sight-Saving Classes*

Teachers were requested to record on the child information sheet the specific eye defects of each child. The technical terms used to denote these eye defects indicate that they were the diagnoses of oculists or ophthalmologists. In compiling these data, a separate heading was used for each eye defect, and for each combination of eye defects, in order to show exactly the great number of different defects and combinations of them often found present in the eyes of one child.

Replies were received for 2,771 children. Such a list as this

might be of value in showing the types that have been enrolled in sight-saving classes. It will probably be of value to ophthalmologists. Since the making of any inferences from this list would require the knowledge of an eye expert, it was believed that the recording of the number of children having each eye defect and each combination of eye defects was all that was necessary for this study. The four most frequently mentioned eye defects were, in order of frequency:

Myopia
Hyperopia
Nystagmus
Astigmatism

These four eye defects and combinations of them with other defects made up 2,067, or 74.6 per cent of the entire number. Myopia and its combinations comprised 1,079, or 38.9 per cent of the whole list. It is possible that other eye defects are listed under myopia which are of a more serious nature than myopia itself. The list was submitted to an eye expert, with the request that he make suggestions as to its arrangement. His suggestions were embodied in the construction of the list. The number of children having each defect or combination of defects is shown in Table XII.

TABLE XII

SPECIFIC EYE DEFECTS OF 2,771 CHILDREN IN SIGHT-SAVING CLASSES

EYE DEFECTS	NUMBER OF CHILDREN
Myopia	195
Myopia and Astigmatism	31
" " Nystagmus	22
" " Lateral Nystagmus, Optic Atrophy, Choroiditis	1
" " Horizontal Nystagmus, Convergent Strabismus	1
" " Nystagmus, Cataract, Leucoma	1
" " Horizontal Nystagmus, External Strabismus, Mixed Astigmatism	1
" " Nystagmus, Albinism, Alternating Strabismus	1
" " Nystagmus, Convergent Strabismus	1
" " Strabismus	10
" " Corneal Opacities	11
" " Posterior Staphyloma	7
" " Congenital Amblyopia	3

TABLE XII (con't)

EYE DEFECTS	NUMBER OF CHILDREN
Myopia and Cataract	3
" " Amblyopia	1
" " Interstitial Keratitis	3
" " Chorio-Retinitis	2
" " Chorio-Retinitis and Convergent Strabismus	1
" " Choroiditis	4
" " Divergent Squint	2
" " Divergent Strabismus, Optic Atrophy, Exophthalmos	1
" " Convergent Strabismus, Amblyopia	1
" " Aniridia	1
" " Crescents	1
" " Undeveloped Optic Nerve	1
" " Congenital Subluxation of Lens	2
" " Detached Retina	1
" " Blepharitis	1
" " Lenticular Opacities, Interstitial Keratitis, Iritis, Lues	1
Malignant Myopia	3
Compound Myopia	1
Myopia Right Eye, Hyperopia Left Eye	1
Progressive Myopia	186
" " and Nystagmus, Optic Nerve Atrophy	1
" " " Nystagmus, Posterior Staphyloma	2
" " " Nystagmus, Choroiditis	4
" " " Posterior Staphyloma	9
" " " Posterior Staphyloma, Leucoma	1
" " " Strabismus	2
" " " Corneal Opacities, Interstitial Keratitis	1
" " " Corneal Opacities	5
" " " Corneal Opacities, Divergent Strabismus	1
" " " Choroiditis	7
" " " Buphthalmos	1
" " " Exophoria, Alternating External Strabismus	1
" " " Amblyopia	1
" " " Albinism	1
High Progressive Myopia	3
Progressive Myopia with Astigmatism	57
Progressive Myopia with Astigmatism and Nystagmus	1
" " " " " Divergent Strabismus	2
" " " " " Corneal Opacities	1
" " " " " Staphyloma	3
" " " " " Staphyloma and Strabismus	1
High Myopia	96
High Myopia and Astigmatism	5
" " " Nystagmus	2
" " " Nystagmus and Buphthalmos	1
" " " Lateral Nystagmus	1
" " " Nystagmus and Divergent Strabismus	2
" " " Nystagmus and old Choroidal Atrophy	1
" " " Central Choroiditis	1

TABLE XII (cont'd)

EYE DEFECTS	NUMBER OF CHILDREN
High Myopia and Choroidal Crescents	1
" " " Choroidal Changes	1
" " " Convergent Strabismus	4
" " " Cataract	2
" " " Buphthalmos	1
" " " Posterior Staphyloma	1
" " " Old Corneal Scars—Interstitial Keratitis and Eczematosis	1
" " " Blepharitis, Marginal Keratitis	1
Myopic Astigmatism	58
Myopic Astigmatism and Nystagmus	25
" " " Nystagmus, Perforation, Corneal Opacities	1
" " " Corneal Opacities	9
" " " Cataract	1
" " " Convergent Strabismus	3
" " " Retinitis Pigmentosa	1
" " " High Glaucoma, Exophthalmos	1
" " " Optic Atrophy	1
High Myopic Astigmatism	1
Compound Myopic Astigmatism	125
Compound Myopic Astigmatism and Nystagmus, Corneal Opacities, Anterior Synechia	1
" " " " Nystagmus, Albinism	3
" " " " Divergent Strabismus, Optic Nerve Atrophy	1
" " " " Strabismus	3
" " " " Strabismus, Optic Nerve Atrophy	1
" " " " Divergent Strabismus, Corneal Opacities	1
" " " " Corneal Opacities	8
" " " " Corneal Opacities, Follicular Conjunctivitis	1
" " " " Cataract	1
" " " " Albinism	2
" " " " Undeveloped Retina	1
" " " " Choroiditis	3
" " " " Chorio-Retinitis	2
" " " " Corneal Ulcers	1
" " " " Phthisis Bulbi	1
High Compound Myopic Astigmatism	13
" " " " and Posterior Staphyloma	9
" " " " " Nystagmus	11
" " " " " Nystagmus and Corneal Opacities	1
Compound Progressive Myopic Astigmatism	49
Compound Progressive Myopic Astigmatism and Nystagmus	1
" " " " " " Divergent Strabismus	1
" " " " " " Albinism	1
" " " " " Divergent Strabismus	4

TABLE XII (cont'd)

EYE DEFECTS	NUMBER OF CHILDREN
Compound Progressive Myopic Astigmatism and Albinism	1
" " " " " Choroiditis, Posterior Staphyloma	1
" " " " " Posterior Staphyloma	2
" " " " " Optic Nerve Atrophy	1
Hyperopia	76
Hyperopia and Astigmatism	28
" " Astigmatism and Nystagmus	4
" " Astigmatism and Cataract	2
" " Astigmatism and Blepharitis	3
" " Astigmatism, Congenital Amblyopia	1
" " Astigmatism, Nystagmus, Strabismus	1
" " Astigmatism, Convergent Strabismus	2
" " Astigmatism, Strabismus	2
" " Nystagmus	14
" " Nystagmus, Convergent Strabismus	1
" " " and Divergent Strabismus	1
" " " " Divergent Strabismus, Corneal Scars	1
" " " " Strabismus, Cataracts	1
" " " " Aphakia	1
" " " " Congenital Cataract	5
" " " " Corneal Opacities, Coloboma of Iris, Aphakia	1
" " " " Arrested Development and Amblyopia	1
" " " " Aniridia	1
" " " " Hyperopic Astigmatism	1
" " " " Optic Nerve Atrophy	1
" " Horizontal Nystagmus, Traumatic Cataract	1
" " Horizontal Nystagmus, Esotropia	1
" " Lateral Nystagmus	1
" " Lateral Nystagmus and Albinism	1
" " Strabismus	15
" " Strabismus, Amblyopia	1
" " Convergent Strabismus	18
" " Convergent Strabismus and Choroiditis	1
" " Convergent Strabismus and Chorio-Retinitis	1
" " Optic Nerve Atrophy	2
" " Optic Atrophy	3
" " Convergent Squint	3
" " Traumatic Cataract	2
" " Congenital Cataract	4
" " Corneal Opacities	4
" " Corneal Opacities and Congenital Cataract	1
" " Choroiditis	3
" " Old Keratitis	1
" " Central Leucoma	1
" " Albinism	2
" " Amblyopia	7
" " Congenital Amblyopia	3

TABLE XII (cont'd)

EYE DEFECTS	NUMBER OF CHILDREN
Hyperopia and Aphakia	2
" " Corneal Scars	1
Hyperopic Astigmatism	102
Hyperopic Astigmatism and Nystagmus	11
" " " Nystagmus and Strabismus	2
" " " Nystagmus, Strabismus and Polar Cataract	1
" " " Nystagmus and Amblyopia	1
" " " Nystagmus and Polar Cataract	1
" " " " and Optic Atrophy	2
" " " " and Keratitis and Corneal Scars	1
" " " " and Optic Neuritis, Convergent Strabismus	1
" " " " and Cataract, Posterior Synechia	1
" " " Horizontal Nystagmus	1
" " " Strabismus	3
" " " Convergent Strabismus	3
" " " Divergent Strabismus	1
" " " Divergent Strabismus and Polar Cataract	1
" " " Optic Neuritis	5
" " " Corneal Scars	2
" " " Congenital Cataracts	2
" " " Congenital Amblyopia	5
" " " Undeveloped Retina	1
" " " Interstitial Keratitis	1
" " " Albinism	3
" " " Leucoma	1
" " " High Esophoria	1
Extreme Hyperopia	2
High Hyperopia	19
" " and Nystagmus and Optic Atrophy	1
" " " Horizontal Nystagmus	1
" " " Corneal Scars, and Posterior Synechiae	1
High Hyperopic Astigmatism	14
High Hyperopic Astigmatism and Convergent Strabismus	8
Compound Hyperopia	1
Compound Hyperopic Astigmatism	153
Compound Hyperopic Astigmatism and Nystagmus	21
" " " " " Albinism	1
" " " " " Strabismus, Anterior Synechiae	1
" " " " " Optic Nerve Atrophy	1
" " " " " Congenital Amblyopia	1
" " " " " Chorio-Retinitis	1
" " " " " Phthisis Bulbi	1
" " " " " Undeveloped Retina, Albinism	1
" " " " Nystagmus, Choroiditis	1
" " " " Lateral Nystagmus	2
" " " " Lateral Nystagmus and Albinism	3

TABLE XII (con't)

EYE DEFECTS	NUMBER OF CHILDREN
Compound Hyperopic Astigmatism and Rotary Nystagmus	1
" " " " Optic Atrophy	3
" " " " Corneal Scars of Ophthalmia Neonatorum	1
" " " " Strabismus	7
" " " " Divergent Strabismus	5
" " " " Convergent Strabismus	20
" " " " Cataract	4
" " " " Leucoma	2
" " " " Amblyopia	6
" " " " Amblyopia and Optic Atrophy	1
" " " " Amblyopia and Corneal Opacities	5
" " " " Chorio-Retinitis	1
" " " " Aniridia	1
" " " " Aphakia	1
" " " " Post Staphyloma	2
" " " " Squint	1
Hyperopic Aphakia, Congenital Cataracts and Strabismus	1
High Degree of Astigmatism	2
High Astigmatism, Corneal Opacities	1
Astigmatism	19
Astigmatism and Nystagmus	3
Astigmatism and Strabismus	3
Astigmatism and Corneal Opacities	1
Astigmatism and Optic Atrophy	1
Compound Astigmatism	3
Compound Astigmatism and Amblyopia	1
" " " Traumatic Cataracts	1
" " " Congenital Cataracts	1
Mixed Astigmatism	45
" " and Nystagmus	11
" " " Nystagmus, Albinism	1
" " " Strabismus	5
" " " Leucoma	1
" " " Albinism	1
" " " Follicular Conjunctivitis	1
" " " Vertical Nystagmus	1
Compound Mixed Astigmatism	1
Compound Astigmatism	1
Hypermetropic Astigmatism and Nystagmus	2
Hypermetropic Astigmatism, Nystagmus and Strabismus	1
Nystagmus	47
Nystagmus, Lateral	15
" Horizontal	13
" Congenital	7
" Oscillating, spontaneous	1
" Horizontal and Divergent Strabismus	3
" " " Divergent Strabismus, Corneal Scars	1
" " " Divergent Strabismus, Anisometropia	2

TABLE XII (cont'd)

EYE DEFECTS	NUMBER OF CHILDREN
Nystagmus, Horizontal and Convergent Squint	1
" " " Convergent Strabismus	3
" " " Convergent Strabismus, Choroiditis	1
" " " Divergent Squint	1
" " " Chorio-Retinitis	4
" " " Albinism	3
Nystagmus and Convergent Strabismus, Aphakia, Congenital Cataracts	1
" " Internal Strabismus	3
Congenital Nystagmus, Convergent Strabismus, Albinism	2
Nystagmus and Convergent Strabismus, Chorio-Retinitis	1
" " Convergent Strabismus	1
" " Convergent Strabismus, Anisometropia	1
" " Convergent Squint	1
" " Alternating Strabismus, Microphthalmos	1
" " Cataract	4
" " Congenital Cataract	22
" " Congenital Cataract and Aphakia	2
" " Amblyopia	6
" " Congenital Amblyopia	3
" " Retinitis Pigmentosa	3
" " Corneal Scars	2
" " Corneal Opacities	2
" " Microphthalmos, Esotropia, Chorio-Retinitis	1
" " Microphthalmos	3
" " Corneal Opacities and Microphthalmos	1
" " Choroiditis, Paresis of External Rectus	1
" " Choroiditis	6
" " Coloboma of Iris	1
" " Astigmatism, Compound Hypermetropia	1
" " Corneal Scars, Anterior Polar Cataract	1
" " Aniridia	1
" " Chorio-Retinitis, Coloboma of Iris	1
" " Arrested Development of Optic Nerve	1
" " Optic Atrophy	9
" " Optic Atrophy and Choroiditis	1
" " Adherent Leucoma	1
" " Exophoria, Astigmatism	1
" " Albinism	16
" " Anisometropia	2
Choroiditis	15
Congenital Choroiditis, Coloboma of Choroid	1
Central Choroiditis	3
Central Choroiditis, Divergent Strabismus	1
Central Choroiditis, Optic Atrophy	2
Choroiditis, Keratitis	2
Macular Choroiditis	1
Disseminated Choroiditis	4
Disseminated Choroiditis, Optic Atrophy	1
Chorio-Retinitis, Optic Atrophy, Iridectomy	1

TABLE XII (cont'd)

EYE DEFECTS	NUMBER OF CHILDREN
Chorio-Retinitis	10
Keratitis	5
Retino-Choroiditis, Optic Atrophy	1
Retinitis Pigmentosa	3
Retinitis Pigmentosa, Convergent Strabismus, Amblyopia	1
Retinitis	1
Retinitis of Degenerative Type	1
Congenital Coloboma of Choroid and Retina	2
Corneal Scars	25
Corneal Scars, Posterior Staphyloma	1
" " Optic Atrophy, Keratitis	1
" " Cataract	1
" " Interstitial Keratitis	5
" " Coloboma of Iris, Congenital Cataracts	1
" " Divergent Squint	2
" " Nystagmus, Synechia	1
Macula Corneæ	6
Corneal Ulcers	7
Phlyctenular Ulcers	1
Corneal Opacities	83
Corneal Opacities, Convergent Strabismus	2
Congenital Opacities of the Lens	1
Cataracts	19
Congenital Cataracts	113
Congenital Cataracts and Coloboma of Iris	5
Traumatic Cataract	7
Mature Traumatic Cataract	1
Bilateral Cataract	1
Glaucoma	1
Infantile Glaucoma	2
Aphakia	6
Optic Neuritis	2
Perforated Globe	1
Phthisis Bulbi	3
Eczema of Left Eye	1
Blepharitis	2
Ulcerative Blepharitis	1
Retinal Degeneration	2
Albinism	7
Albinism, Negroid	1
Keratitis	6
Keratitis, T. B. Macula Corneæ	1
Keratitis and Ulcers	1
Keratitis, Posterior Synechia, Irido-Cyclitis	1
Vascularized Keratitis, Trichiasis, Photophobia	1
Interstitial Keratitis	63
" " and Macula Corneæ	1
" " " Leucoma	1
" " " Iritis	7

TABLE XII (con't)

EYE DEFECTS	NUMBER OF CHILDREN
Interstitial Keratitis and Ptosis	1
" " " Posterior Synechia	1
" " " Corneal Opacities	3
" " " Ulcers of Cornea	1
Old Interstitial Keratitis, Corneal Opacities	2
Phlyctenular Keratitis	5
Phlyctenular Keratitis, Leucoma of Cornea	1
Amblyopia	20
Amblyopia, Posterior Synechia, Coloboma of Iris	1
High Amblyopia	1
Albinotic Amblyopia	1
Congenital Amblyopia	11
Congenital Amblyopia, Anisometropia	2
Arachnoiditis	1
Hemorrhage, Intraocular	1
Congenital Ptosis	1
Ophthalmia Neonatorum	4
Photophobia, Districhiasis	1
Hypermetropia	5
Hypermetropia and Nystagmus	2
High Hypermetropia	1
Hypermetropia and Astigmatism	2
Paralysis of External Right Rectus	1
Congenital Dislocation of Lens	11
Dislocation of Lens	10
Dislocation of Lens, Coloboma of Iris, Conical Cornea	3
Anisometropia	5
Marked Posterior Staphyloma	1
Detached Retina	2
Phlyctenular Conjunctivitis	1
Cataract and Divergent Squint	1
Cataract and Convergent Strabismus	1
Congenital Cataract, Aphakia	2
Congenital Cataract, Glaucoma	2
Zonular Cataract, Horizontal Nystagmus	1
Zonular Cataract, Corneal Opacities	1
Infantile Cataract	1
Cataracts, Post Polar	2
Fundus Trouble	1
Congenital Fundal Changes	2
Congenital Fundus Condition	1
Optic Atrophy	23
Optic Atrophy and Amblyopia	1
Optic Atrophy, Hereditary Amblyopia	3
Congenital Optic Atrophy	1
Optic Atrophy, Convergent Strabismus	2
Optic Nerve Atrophy	3
Macula Corneæ	2
Coloboma	1

TABLE XII (con't)

EYE DEFECTS	NUMBER OF CHILDREN
Congenital Coloboma of Iris	2
Coloboma of Choroid	2
Congenital Coloboma of Iris and Choroid	1
Congenital Coloboma, Microphthalmos	1
Congenital Coloboma	2
Coloboma at Macula	1
Corneal Nebulæ	2
Microphthalmos	1
Aniridia	2
Buphthalmos	8
Trachoma	4
Old Trachoma	1
Chronic Trachoma	1
Divergent Squint	1
Convergent and Concomitant Squint	1
Internal Squint	2
Strabismus	15
Convergent Strabismus	14
Divergent Strabismus	4
Convergent Strabismus, Interstitial Keratitis	1
Convergent Strabismus, Congenital Cataract	1
Convergent Strabismus, Optic Atrophy	1
Strabismus and Corneal Opacities	1
Internal Strabismus and Congenital Ptosis, Right Eye	1
Strabismus, Optic Atrophy, Amblyopia	1
Divergent Strabismus, Aphakia	1
Divergent Strabismus, Congenital Coloboma of Iris	2
Convergent Strabismus, Detached Retina	1
Internal Strabismus, Choroidal Atrophy	2
Convergent Strabismus, Congenital Lues	1
Divergent Strabismus, Right Eye, Amblyopia	1
Strabismus with Amblyopia	1
Early Ophthalmia	1
Keratoconus	1
Chronic Conjunctivitis, Nebula over Portion of Cornea	1
Corneal Conjunctivitis	1
Luetic	4
Probable Lues	1
Inflammation of Iris and Sclera	1
Burned Cornea	1
Arrested Development	1
Undeveloped Retina	1
Undeveloped Nerve	5
Undeveloped Eye Structure	3
Grand Total	2,771

8. *Number of Children Wearing and Not Wearing Glasses*

The question as to the number of children who were wearing or were not wearing glasses was answered for 2,596 children. The replies received were as follows: 2,229 children were wearing glasses; and 367 children were not wearing glasses.

For children not wearing glasses, teachers were requested to reply to the following question, "Has doctor stated that glasses would not improve vision?" The following replies to this question were received:

YES—268
NO— 55
NOT ANSWERED— 44

Thus, there were but 99 cases in which the question of whether or not glasses should be worn remained in doubt. This means that 2,229, or 95.7 per cent, of the 2,328 children who might profit by wearing glasses, were wearing them. No data were collected concerning the correctness of refraction in the glasses worn. If the proper glasses were used, it can be fairly stated that all but 4.3 per cent of the children who might profit by the use of glasses were receiving the benefit of them.

9. *Changes in Visual Acuity While in Sight-Saving Classes*

The amount of vision possessed by an individual, measured by using an eye-chart, is expressed in the form of a fraction in which the numerator is the distance from the chart, and the denominator is the designation given to the smallest type on the chart which can be read. For example, on the Snellen Chart, the line of print which can be read by persons with normal vision at twenty feet is called "20." A person with normal vision who reads this line of print from a distance of twenty feet is said to have 20/20 vision in the eye whose vision was tested. A line of print which can be read by a person with normal vision at forty feet, is called "40." If it is necessary for a person to approach to twenty feet from the chart in order to read this line, he is said to possess 20/40 vision. A person who cannot read at a distance of twenty feet what a normally visioned person could read at 200 feet, is said to have 20/200 vision. This is generally accepted as the lowest vision standard for

entrance into a sight-saving class. Below 20/200 is generally considered as blind. If, at the time of one examination, a child in a sight-saving class had 20/100 vision in his better eye with the best possible refraction, and at a later examination his vision in that eye was 20/40, his vision had improved. If, at the second examination his vision was still 20/100, it had remained the same. If his vision at the second examination was 20/200, it had become worse.

The Snellen Chart is not the only one used, but the principle is the same in the various charts.

Naturally, where but one examination was made, it was impossible to make comparisons. So many children had been in sight-saving classes but a short time that there had been little opportunity to note any change. This accounts for the fact that only 1,751 reports were usable for the purposes of comparison. For these 1,751 children, comparisons of the amount of vision possessed at two different examination times are recorded in Table XIII.

TABLE XIII

CHANGES IN VISUAL ACUITY OF 1,751 PUPILS

	VISION AT THE TIME OF SECOND EXAMINATION		
	BETTER	SAME	WORSE
Number of Children	462	1,124	165
Percentage	26.4	64.2	9.4

In considering these facts, there are two things to keep in mind. The nature of certain eye defects is such that the vision may not necessarily change very much. There is no evidence submitted here to show that the vision of these children has been conserved more in these special classes than in regular grades. The fact, however, that 90.6 per cent of them either had the same or better vision at the time of the second examination would seem to indicate that the special attention given to the use and care of the eyes in sight-saving classes had actually resulted in the conservation of vision.

10. *Distribution of 709 Children According to Intelligence Quotients*

An intelligence quotient, calculated through the use of a group test, would be decidedly inaccurate for visually handicapped chil-

dren. To eliminate the recording of such intelligence quotients, the following question was asked, "Has the child been given a psychological examination?" It was assumed that the use of the word "psychological" would indicate that intelligence quotients secured by individual examinations were the only ones to be recorded. It was also assumed that such individual examinations were given in such a manner as to allow for the visual handicap of the children. Both these assumptions may have been incorrect. This must be kept in mind in considering the data for the 709 children who were recorded as having been given a psychological examination.

In grouping these 709 children Woodrow's* classification was used. The distribution according to this classification is recorded in Table XIV.

TABLE XIV

CLASSIFICATION OF 709 PUPILS ACCORDING TO I. Q.

	FEEBLE-MINDED	BORDER-LINE, SOME-TIMES DULL, OFTEN FEEBLE-MINDED	DULL, RARELY FEEBLE-MINDED	NORMAL OR AVER-AGE	SU-PERIOR	VERY SU-PERIOR	GIFTED GENIUS OR NEAR GENIUS
I.Q.....	Below .70	.70–.80	.80–.90	.90–1.10	1.10–1.20	1.20–1.40	Above 1.40
No. of Children....	93	146	179	224	45	22	0
Percentage	13.1	20.6	25.2	31.6	6.3	3.1	0.0
Woodrow's Percentage.....	1.00	6.00	13.0	60.0	13.0	6.75	.25

The distribution in the above table is shown graphically in Figure 3, page 59. This distribution is decidedly skewed toward the lower I.Q. side. How much it varies from a normal distribution is shown by means of the broken lines.

If it were certain that the tests administered to these children were adapted to children visually handicapped, Table XIV and Figure 3 would indicate that on the whole, this particular group of 709 children rated considerably below normal. Since there is

* Woodrow, Herbert. "Brightness and Dullness in Children." p. 54. (11)

some doubt as to the reliability of the data collected, it would be unwise to reach any very decided conclusion about the mentality of these children.

In each community which furnished information shown in this section, there were some children in the "Below 70 I.Q." group. For all the cities there were 93 such children. Unless further examination proved these intelligence quotients to be incorrect,

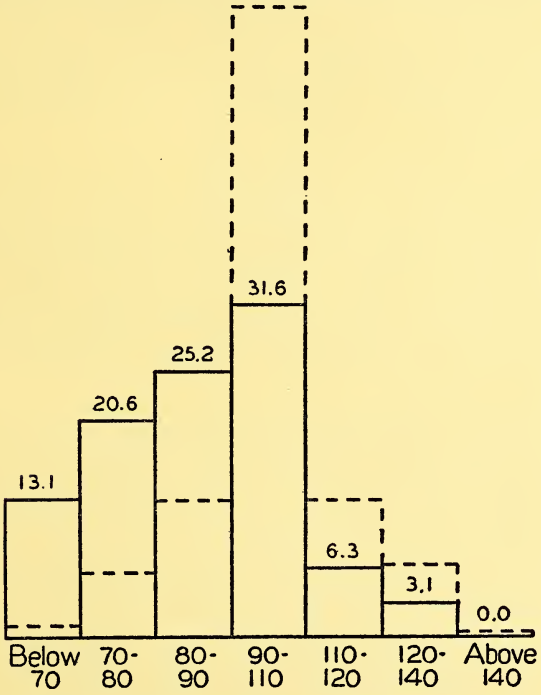

Fig. 3. Distribution of 709 Pupils According to I. Q.

there is a question as to the advisability of admitting them into a sight-saving class. It is a rather commonly accepted practice to place children in special classes according to their greatest handicap. Low mentality is probably a greater handicap than defective vision. Where a sufficient number of cases exists in which there is the double handicap of defective vision and low mentality, consideration should be given to the possibility of organizing such chil-

dren into a separate sight-saving class. In communities having but one sight-saving class, it would be impossible to organize such a class.

11. *Distribution of 1,986 Children According to Teacher's Judgment as to Mentality*

In cases where no psychological examination had been given, a teacher's judgment as to each child's mentality was requested. The classifications used were: Deficient, Poor, Fair, Good, and Superior. In these five classifications 1,986 pupils were grouped. They are recorded in Table XV.

TABLE XV

CLASSIFICATION OF 1,986 PUPILS ACCORDING TO TEACHER'S JUDGMENT AS TO MENTALITY

MENTALITY GROUP	DEFICIENT	POOR	FAIR	GOOD	SUPERIOR	TOTAL
Number of Children...	109	282	655	716	224	1,986
Percentage.....	5.5	14.2	32.9	36.1	11.3	100.0

The data recorded in Table XV are shown graphically in Figure 4, page 61.

Figure 4 shows a distribution skewed toward the better mentality side. According to the judgment of their teachers, the distribution of these 1,986 children appears to be, on the whole, slightly better, than would be expected for any unselected group of children. This information is of necessity general in character. It was desired to obtain the teacher's estimates of the mentality of the children in sight-saving classes, where no objective measure of intelligence had been made. As was previously stated in connection with general health, a teacher with but 13 or 14 children, whom she instructs individually, was in a position to give fairly accurate estimates.

There is a question as to the wisdom of placing in a sight-saving class children who are handicapped mentally. If a mental handicap is greater than a physical handicap, the child should be placed according to his mental handicap. One hundred nine children were rated as deficient by teachers. If careful psychological examinations indicated that the teachers were correct in their estimates, consideration should be given to whether or not the child has been most suitably placed. If enough children, having both mental and

physical handicap, were present in one locality it might be advisable to organize a class especially for such children.

According to the teachers' rough estimates shown in this section, it may be concluded that pupils in sight-saving classes are, in general, similar mentally to an unselected group of children.

In Section 10, page 57, it will be recalled that according to the results of psychological examinations, a group of 709 children

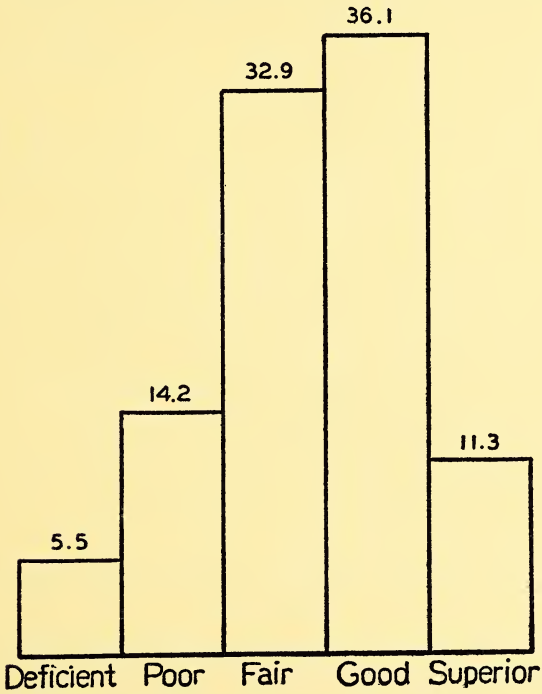

Fig. 4. Distribution of Teacher's Judgment as to the Mentality of 1,986 Children

presented results in this section quite contrary to those obtained for 1,986 children where teachers' judgments were used. This may indicate that any of the following conditions may have existed:

a. The teachers may have been too liberal in their judgments in the case of the 1,986 children.

b. The visual handicaps of the 709 children may not have been given proper consideration in the psychological tests.

c. It may have "just happened" that a larger proportion of children of low mentality were in the group psychologically examined. Very often when a child's school work indicates that he may be mentally handicapped, he is given a psychological examination.

The two sets of data are not comparable, since with the 709 children an objective measure was used, while with the 1,986 children subjective teachers' judgments were used. Nevertheless, the conditions indicated in the two findings are so contrary that the reliability of either or both might readily be questioned. The distribution according to teachers' judgments was made for a group almost three times the size of that for whom intelligence quotients had been obtained. Even though the estimates were subjective, it is probably true that the large number of cases balanced tendencies toward severity or leniency among the different teachers. The lack of absolute information as to how psychological tests were given, lessens the value of the results obtained from them. From the information recorded in this and the previous section, it can only be concluded that for a certain group of 709 children who had been psychologically examined, the results indicate a distribution below normal. For another group of 1,986 children, it can only be concluded that, based solely on teachers' judgments, the results obtained indicate a distribution more nearly normal, but skewed somewhat toward the better mentality side.

12. *Ages of Children at the Time They Entered Sight-Saving Classes*

If sight-saving classes are to conserve sight, the earlier an eligible child is placed in this type of special class, the more opportunity there will be for conserving his sight. The placing of a child in a sight-saving class is considerably dependent upon the following:

a. The discovery of the need for such placement.
b. The location of the class.
c. The child's ability to travel to the class.
d. The transportation facilities available.

The ages at which children enter these classes is to some extent a measure of the efficiency of the medical inspector, nurse, teacher, principal, etc., in discovering the child's defective vision. It must

be remembered, however, that the defects making a child eligible for enrollment in such a class may not develop until a comparatively late date.

Two thousand seven hundred sixty-four (2,764) children entered sight-saving classes at the various ages shown in Table XVI.

Considering the four factors given above, the fact that half the children were already in sight-saving classes before reaching the age of nine years and 5 months, the record seems to be a very commendable one for those persons who are responsible for locating and placing of these children.

TABLE XVI

AGES AT WHICH 2,764 CHILDREN ENTERED SIGHT-SAVING CLASSES

AGE GROUP				NUMBER OF CHILDREN	AGE GROUP				NUMBER OF CHILDREN
YRS.	MOS.	YRS.	MOS.		YRS.	MOS.	YRS.	MOS.	
5		to 5	5	3	12	6	to 12	11	98
5	6	to 5	11	30	13		to 13	5	91
6		to 6	5	120	13	6	to 13	11	62
6	6	to 6	11	160	14		to 14	5	49
7		to 7	5	182	14	6	to 14	11	33
7	6	to 7	11	216	15		to 15	5	20
8		to 8	5	252	15	6	to 15	11	12
8	6	to 8	11	226	16		to 16	5	10
9		to 9	5	231	16	6	to 16	11	5
9	6	to 9	11	180	17		to 17	5	0
10		to 10	5	197	17	6	to 17	11	3
10	6	to 10	11	183	18		to 18	5	1
11		to 11	5	156	18	6	to 18	11	1
11	6	to 11	11	151	19		to 19	5	1
12		to 12	5	91	Total				2,764

From this table the following facts were gathered:

313 children, or 11.3 per cent, entered sight-saving class before reaching 7 yrs. of age
711 children, or 25.7 per cent, entered sight-saving class before reaching 8 yrs. of age
1,189 children, or 43.0 per cent, entered sight-saving class before reaching 9 yrs. of age
1,600 children, or 57.9 per cent, entereds ight-saving class before reaching 10 yrs. of age
1,980 children, or 71.9 per cent, entered sight-saving class before reaching 11 yrs. of age
2,287 children, or 82.7 per cent, entered sight-saving class beforer eaching 12 yrs. of age
1,382 or half the children entered sight-saving class before reaching 9 yrs. and 5 months of age

13. *Grades in Which Children Were Enrolled at the Time They Entered Sight-Saving Classes*

In addition to the compilation of ages of children at the time they entered sight-saving classes, similar information concerning the grades in which they were enrolled at the time of entrance may be of value and interest. The grades at entrance for 2,772 children are recorded in Table XVII.

TABLE XVII

Classification of 2,722 Pupils by Grades at the Time They Entered Sight-Saving Classes

Grades	Pre 1st	1	2	3	4	5	6	7	8	9	10	11	12	Total
Number in each grade	32	629	600	547	407	255	170	80	26	13	7	4	2	2,772

From the figures in Table XVII it was discovered that:

32 or 1.2 per cent entered sight-saving class before entering the 1st grade.
661 or 23.8 " " " " " " " " " " 2nd "
1261 or 45.5 " " " " " " " " " " 3rd "
1808 or 65.2 " " " " " " " " " " 4th "
2215 or 79.9 " " " " " " " " " " 5th "
2470 or 89.1 " " " " " " " " " " 6th "
302 or 10.9 " " " " " " after " " 6th "

One thousand three hundred eighty-six (1,386) or half the children entered sight-saving class before or while in the third grade. Combining the facts found for half the number of sight-saving children as shown in Section 12 and in this section it can be stated that they entered sight-saving classes before having reached the

age nine years and 5 months and before having completed the 3rd grade. Taking into consideration the four factors listed previously on page 62, this indicates that the persons who locate and place these children with serious eye defects have done exceedingly well in locating and placing them at such an early age and so early in their school life.

14. *Length of Time 2,790 Pupils Had Been Enrolled in Sight-Saving Classes up to the Time of This Survey*

858, or 30.8 per cent, of 2,790 pupils had been enrolled in sight-saving classes less than eleven months.

1,395, or 50 per cent, of 2,790 pupils had been in sight-saving classes for two years or more.

The length of time spent in sight-saving classes by the 2,790 pupils is shown in Table XVIII.

TABLE XVIII

LENGTH OF TIME SPENT IN SIGHT-SAVING CLASSES BY 2,790 PUPILS

Length of Time in Sight-Saving Class: 1–1^{11} (1 yr. to 1 yr. & 11 mos. etc.)	Less than 11 mos.	1–1^{11}	2–2^{11}	3–3^{11}	4–4^{11}	5–5^{11}	6–6^{11}	7–7^{11}	8–8^{11}	9–9^{11}	10–10^{11}	11–11^{11}
No. of children in each group	858	667	399	339	252	134	78	36	13	10	2	2

Total.....2,790

From this table the following facts may be noted:

141 or 5.1 per cent had been in sight-saving classes 6 years or longer.
275 or 9.9 " " " " " " " 5 " " "
527 or 18.9 " " " " " " " 4 " " "
866 or 31.1 " " " " " " " 3 " " "
1,265 or 45.3 " " " " " " " 2 " " "
1,932 or 69.2 " " " " " " " 1 year " "

In considering these figures, it must be remembered that all sight-saving classes have not been organized for the same length of time. This was pointed out in Table I, page 12, where the growth

in the number of classes each year was recorded. In 1919, there were but 74 classes. Only those children who were enrolled in one of those 74 classes had had the opportunity to be in a sight-saving class for a period of nine years. The recency of growth of these classes naturally places some limit on the possible length of time that children might have been enrolled in them.

The information recorded in this section was included because the length of time sight-saving class teachers have had to do the things they are supposed to do, has been one factor in determining their achievements.

15. *Number of Children and Number of Grades Found in Each Sight-Saving Class*

Besides the length of time each child had spent in a sight-saving class, two other considerations which might influence the character and quality of work which each teacher had been able to do are the number of children per class and the number of different grades of work each teacher has been expected to teach.

In 158 classes, promotions were made semi-annually with the result that there were two grades represented for each school year. These grades were variously designated as 1B, 1A, 1 High, 1 Low, 1^1, 1^2, etc. In such classes, each division of a numerical grade was considered as a separate grade of work. The number of classes having each number of children and each number of grades is shown in Table XIX.

Because there are children in each sight-saving class of different ages and grades, the work in these classes in academic subjects is of necessity largely individual. The work that each teacher should prepare depends on the number of different grades in her class. Table XIX shows the wide variations existing in classes. These range from the class with eight children and two grades to the class with 20 children in which 12 different grades are represented. The median number of grades per class was 7.3 and the median number of children per class was 15.4. Thus half the teachers had more than 15 children in their classes, and more than seven different grades of work to prepare and teach. It must be remembered that the educational aim of sight-saving classes is secondary to the conservation aim. Nevertheless, children in sight-saving classes are

graded in the same manner as children in regular grades, and an effort is made to reach the same standards of school proficiency.

TABLE XIX

CLASSIFICATION OF 158 CLASSES WHICH PROMOTE SEMI-ANNUALLY, ACCORDING TO SIZE AND NUMBER OF GRADES

NUMBER OF CHILDREN PER CLASS

NUMBER OF GRADES PER CLASS	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	TOTAL
2			1		1											2
3			1	1	1		1	2	2							8
4			1	1	3	3		2		1	1	2				14
5	1		2	1	1	2				3	3	2	2	1		18
MEDIAN 6		2	3	1	3	3	3		2	3	2		2	1	4	29
7		1		1	3	1	1		6	4	3	3	1	1	2	27
8				1	2	1	3	2	2	1	1	2	2	3	1	21
9							1		2	1	1	1	2	1	5	14
10					1			1			4	1	4	5	2	18
11									1		1		1	1	1	5
12													1		1	2
Total	1	3	8	6	15	10	9	7	15	13	17	11	14	13	16	158
										MEDIAN						

Note: The heavy horizontal line represents approximate median number of grades per class.

The heavy vertical line represents approximate median number of children per class.

With the added burden of teaching handicapped children, even though the classes are relatively small, there is a grave question as to the practicality of expecting a teacher to instruct 15 children individually in the work of seven different school grades. In the 158 classes included in Table XIX that is what has been expected of more than half the teachers.

In the case of 19 of the 158 classes included in Table XIX there was but one class in the school district. Where this condition exists the different number of grades represented in each class would naturally be large. Where a number of classes exist in a city, it would be well worth trying to locate the classes in such a way that the number of grades per class would be reduced to a minimum.

In practically all the 158 classes, the children go to the regular

grades for subjects that do not require close eye work, such as Physical Education, Oral English, etc. However, the number of subjects which sight-saving class teachers do teach is great enough to make justifiable the criticism of too many different grades per class.

In 34 classes promotions were made annually. There was in these classes but one grade for each school year. Table XX shows the number of classes containing each number of children and each number of grades.

TABLE XX

CLASSIFICATION OF 34 CLASSES WHICH PROMOTE ANNUALLY, ACCORDING TO SIZE AND NUMBER OF GRADES

NUMBER OF CHILDREN PER CLASS

NUMBER OF CHILDREN PER CLASS	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL
1								1					1
2	1									1			2
3					2		2	1	1	1			7
MEDIAN 4						2	1		1	1	1		6
5				1	2	1	2	1		1			8
6							1		1		2	1	5
7							1		1	1			3
8										2			2
Total	1	0	0	1	4	3	7	3	4	7	3	1	34
									MEDIAN				

Note: The heavy horizontal line represents the approximate median number of grades per class.
The heavy vertical line represents the approximate median number of puplis per class.

For these 34 classes the median number of grades per class was 5.1 and the median number of children per class was 11.7. While the classes in this table are much smaller on an average than those recorded in Table XIX the number of grades per class is still greater than it should be. Practically all of these classes were in cities where but one class had been organized. Under such circumstances the number of grades per class will probably always be great.

Hazel C. Hadley* in quoting the provisions of the State Law of Ohio concerning the size of classes says:

"Under no condition shall one teacher be assigned more than 16 pupils. In case there are four or more grades enrolled no teachers shall be assigned more than twelve pupils without the consent of the supervisor. In no school district having more than one sight-saving class, shall more than five grades be assigned to one teacher."

Ohio is undoubtedly one of the leading states in sight-saving class work. In the 158 classes with semi-annual promotions and the 34 with annual promotions the median number of children and grades per class exceeds the standards set in Ohio.

16. *Distribution of 2,798 Pupils According to Age at the Time of This Study*

There were pupils in sight-saving classes ranging in age from less than five years and six months, to over nineteen years and six months. The middle 50 per cent ranged from ten years to fourteen years and five months. One hundred fifty pupils who had reached the compulsory age limit were still enrolled in these classes. This study was not planned to investigate the effect of sight-saving classes in retaining children in school. Such an investigation would be of value.

The number of pupils of different ages enrolled in sight-saving classes at the time of this study is recorded in Table XXI.

17. *Enrollment of 2,800 Sight-Saving Children by Grades*

Exactly 60 per cent, or 1,680, of the 2,800 children were in grades three, four, five and six at the time of this survey. There were sight-saving children in every grade from kindergarten to the twelfth. Three hundred sixty, or 12.9 per cent of the total, were classified as 8th Grade or higher. The complete distribution by grades is recorded in Table XXII.

18. *Age-Grade Tabulations of 2,013 Children at the Time They Entered Sight-Saving Classes and at the Time of This Study*

While the scholastic progress of sight-saving pupils is secondary to the conservation of their vision, such progress is an important

* Hadley, Hazel C. *Sight-Saving Classes in the Public Schools.* p. 84. (1)

TABLE XXI

CLASSIFICATION OF 2,798 PUPILS ACCORDING TO AGE AT THE TIME OF THIS SURVEY

AGE GROUP				NUMBER OF CHILDREN	AGE GROUP				NUMBER OF CHILDREN
YRS.	MOS.	YRS.	MOS.		YRS.	MOS.	YRS.	MOS.	
5	6	to 5	11	2	13		to 13	5	201
6		to 6	5	9	13	6	to 13	11	181
6	6	to 6	11	33	14		to 14	5	157
7		to 7	5	39	14	6	to 14	1	170
7	6	to 7	11	89	15		to 15	15	120
8		to 8	5	96	15	6	to 15	11	86
8	6	to 8	11	147	16		to 16	5	57
9		to 9	5	123	16	6	to 16	11	35
9	6	to 9	11	159	17		to 17	5	19
10		to 10	5	158	17	6	to 17	11	17
10	6	to 10	11	195	18		to 18	5	10
11		to 11	5	148	18	6	to 18	11	7
11	6	to 11	11	196	19		to 19	5	2
12		to 12	5	164	19	6	to 19	11	3
12	6	to 12	11	175	Total.....				7,298

TABLE XXII

GRADES IN WHICH 2,800 PUPILS WERE ENROLLED AT THE TIME OF THIS SURVEY

GRADES	KGN.	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
Number of Children.	2	173	276	357	448	413	462	301	249	62	28	18	11	2,800

consideration in the work of sight-saving classes. On 2,013 child information sheets, the children were recorded in certain grades at entrance and in certain grades at the time the sheets were completed. These grades were similar in terminology to the grades of pupils in regular classes. Nothing in the literature of these classes nor in the correspondence with supervisors indicated that the classification of these children by grades was any different than the classification used in regular classes. In order to discover what changes had taken place in the classification of pupils between the time they entered sight-saving classes and the time of this study, two age-grade tabulations were made. These are shown in Table XXIII, page 71, and Table XXIV, page 72. In making these tabulations, only those children were used who had had at least one promotion opportunity. In each table the child's age was

TABLE XXIII

AGE-GRADE TABULATION OF 2,013 PUPILS AT THE TIME THEY ENTERED SIGHT-SAVING CLASSES

AGE GROUP				PRE 1ST	GRADES												TOTAL
YRS.	MOS.	YRS.	MOS.		1	2	3	4	5	6	7	8	9	10	11	12	
5		to 5	5	3	4												7
5	6	to 5	11	5	31												36
6		to 6	5	6	87	9											102
6	6	to 6	11		97	29	2										128
7		to 7	5	3	66	56	7	1									133
7	6	to 7	11	4	55	81	26										166
8		to 8	5		43	76	54	11	1								185
8	6	to 8	11		26	63	76	12									177
9		to 9	5		18	50	59	42	5								174
9	6	to 9	11	1	6	32	43	43	12	1							138
10		to 10	5		7	21	48	39	18	1							134
10	6	to 10	11		6	14	29	42	32	3							126
11		to 11	5		4	7	18	31	26	22	2						110
11	6	to 11	11		2	9	14	22	25	16	4	2					94
12		to 12	5		6	3	7	11	17	11	8	1					64
12	6	to 12	11		1	2	5	9	21	19	8	1					66
13		to 13	5		1	4	3	13	11	13	9	3					58
13	6	to 13	11				3	8	7	7	12	4	2				43
14		to 14	5		1			2	6	7	6	2	2				26
14	6	to 14	11					3	1	4	9	1	2	1			21
15		to 15	5						2	7		1					10
15	6	to 15	11								1	2	1	1			5
16		to 16	5								1			1			2
16	6	to 16	11								1		1	1	1		4
17		to 17	5														
17	6	to 17	11								1			2			3
18		to 18	5														
18	6	to 18	11												1	1	2
19		to 19	5														
19	6	to 19	11														
Total				22	461	456	394	289	184	111	62	17	8	6	2	1	2013
Under-age				0	35	38	35	24	18	5	6	4	2	1	0	0	168
Normal				14	305	276	232	166	101	68	37	10	5	3	1	1	1219
Over-age				8	121	142	127	99	65	38	19	3	1	2	1	0	626
% Under-age				0.0	7.6	8.3	8.9	8.3	9.8	4.5	9.7	23.5	25.0	16.7	0.0	0.0	8.3
% Normal				63.6	66.2	60.6	58.9	57.4	54.9	61.3	59.7	58.8	62.5	50.0	50.0	100.0	60.6
% Over-age				36.4	26.2	31.1	32.2	34.3	35.3	34.2	30.6	17.7	12.5	33.3	50.0	0.0	31.1

Note—Children below the dotted line are 3 or more years over-age.

TABLE XXIV

AGE-GRADE TABULATION OF 2,013 PUPILS AT THE TIME OF THIS SURVEY

AGE GROUP				PRE 1ST	GRADES												TOTAL
YRS.	MOS.	YRS.	MOS.		1	2	3	4	5	6	7	8	9	10	11	12	
5		to 5	5														
5	6	to 5	11														
6		to 6	5		6	1											7
6	6	to 6	11		6	3											9
7		to 7	5		15	26	5										46
7	6	to 7	11		14	32	7										53
8		to 8	5		12	24	36	7	2								81
8	6	to 8	11		4	27	42	14	1								88
9		to 9	5		2	13	49	36	8								108
9	6	to 9	11		2	10	28	50	24	1							115
10		to 10	5		2	12	21	41	43	5	2						126
10	6	to 10	11		2	6	15	32	50	14	1						120
11		to 11	5		1	4	13	35	35	36	7						131
11	6	to 11	11			3	9	33	34	46	10	2					137
12		to 12	5		2	2	5	18	41	58	27	8					161
12	6	to 12	11				9	11	18	42	44	10	2				136
13		to 13	5		1	2	3	7	17	33	33	26	3				125
13	6	to 13	11			1	1	6	14	43	33	31	2				131
14		to 14	5			3	1	9	11	19	31	29	13	2			118
14	6	to 14	11					5	13	15	31	34	14	1			113
15		to 15	5				1	2	3	19	12	21	11	2	1		72
15	6	to 15	11					1	2	2	13	25	3	5	1		52
16		to 16	5							2	2	14	1	2	3	1	25
16	6	to 16	11						1	1	1	5	1	6	4		19
17		to 17	5								4	2	2	2	2		12
17	6	to 17	11							2	1	3		4	3	5	18
18		to 18	5										1		1	1	3
18	6	to 18	11									1	1	1	1	1	5
19		to 19	5													1	1
19	6	to 19	11												1		1
Total				0	69	169	245	307	317	338	252	211	54	25	17	9	2013
Under-age				0	0	4	12	21	35	20	20	20	7	3	2	1	145
Normal				0	41	109	155	159	162	182	137	120	41	15	12	7	1140
Over-age				0	28	56	78	127	120	136	95	71	6	7	3	1	728
% Under-age				0	0.0	2.4	4.9	6.8	11.0	5.9	7.9	9.5	13.0	12.0	11.8	11.1	7.2
% Normal				0	59.4	64.5	63.3	51.8	51.1	53.9	54.4	56.9	75.9	60.0	70.6	77.8	56.6
% Over-age				0	40.6	33.1	31.8	41.4	37.9	40.2	37.7	33.6	11.1	28.0	17.6	11.1	36.2

calculated as of the beginning of the term. For example, if a child's birthday was May 1 of a certain year, and the beginning of the term in his school was February 1, his age was calculated as of February 1 of that year. Whatever his grade, in practically every case he had been in that grade since the beginning of the term.

Since the pupils included in these age-grade tabulations came from classes in 21 states, the compulsory attendance laws provided entrance ages different for some than for others. For that reason, a two-year period was allowed as normal for each grade. The children considered normal for grade are included between the heavy black lines on the tables. The children above the upper black line are under-age and those below the lower black line are over-age. Children below the dotted lines are three years or more over-age.

Table XXIII shows, that of the 2,013 children:

168 or 8.3 per cent were under-age on entering sight-saving class.
1,219 or 60.6 " " " normal " " " " " "
626 or 31.1 " " " over-age " " " " " "

There were 38 children over-age three years or more, at the time they entered sight-saving classes.

Table XXIV shows that of the same 2,013 children:

145 or 7.2 per cent were under-age at the time this study was made.
1,140 or 56.6 " " " normal " " " " " " " "
728 or 36.2 " " " over-age " " " " " " " "

There were 52 children over-age three years or more at the time this study was made.

Thus it can be seen that there was a decrease of children under-age for grade of 1.1 per cent from 8.3 per cent to 7.2 per cent. There was an increase in overageness of 5.1 per cent from 31.1 per cent to 36.2 per cent.

The 2,013 pupils shown in both tabulations had spent an aggregate of 6,317 years in sight-saving classes. This figure is the sum of the lengths of time each child had been in a sight-saving class. Prior to the time they entered sight-saving classes, the 2,013 children had been in regular grades an aggregate of 7,524 years. This figure represents the sum of the lengths of time each child had been in regular grades. Since the age of entering regular grades was not

secured, an arbitrary age of six years was taken as the age at which all the children began school.

In the aggregate 7,524 years that the 2,013 pupils had been in regular grades, overageness developed 31.1 per cent. In the aggregate 6,317 years that they had been in sight-saving classes, the overageness had increased 5.1 per cent.

While no facts were gathered concerning standards for promotion there was nothing in extensive correspondence with teachers and supervisors to indicate that these standards were any different for sight-saving pupils than for children in regular grades.

These facts seem to indicate that while overageness has increased for the 2,013 children to the extent of 5.1 per cent, this increase is considerably less than it would have been for the same children had they remained in regular grades.

19. *Mentality Groupings of the 282 Children Who Moved from Normal to Over-Age or Vice Versa*

There were 90 children who were over-age at the time they entered sight-saving classes, who were not over-age at the time this study was made.

There were 192 children who were not over-age when they entered sight-saving classes, but were over-age at the time this study was made. The increase in number of children over-age was therefore 102.

Since the two groups of children who had changed from normal to over-age and from over-age to normal were responsible for the net change in total overageness, it might be of value to show how these children had been rated according to intelligence quotients and teachers' judgments as to mentality.

Table XXV, page 75, gives this information for the 90 children who were over-age on entering sight-saving class, but were not over-age at the time of the survey.

These 90 pupils in Table XXV moved from over-age to normal while in sight-saving classes. Adding the figures in columns 1 and 2, it can be noted that 40, or 44.4 per cent of these children either had intelligence quotients above 90, or were rated good, or better, by their teachers. Adding the figures in columns 4 and 5, it can be seen that 12, or 13.3 per cent of these children had intelligence

TABLE XXV

DISTRIBUTION BY INTELLIGENCE QUOTIENTS AND TEACHERS' JUDGMENTS OF 90 CHILDREN OVER-AGE ON ENTERING SIGHT-SAVING CLASSES, BUT NOT OVER-AGE AT THE TIME OF THIS SURVEY

COLUMN	1	2	3	4	5	6	7
Intelligence Quotient.	110–120	90–110	80–90	70–80	Below 70	Not Given	Total
Number of Children..	1	8	10	6	2	0	27
Teachers' Judgment..	Superior	Good	Fair	Poor	Deficient	Not Given	Total
Number of Children..	5	26	18	3	1	6	63
					Grand Total		90

quotients less than 80 or were rated poor or deficient by their teachers. The sum of the figures in columns 1, 2 and 3, shows that 68, or 75.6 per cent of the children had intelligence quotients above 80 or were rated fair or better by their teachers. For the most part then, these 90 children rated fairly well in mentality according to the measures used. If the intelligence quotients and teachers' judgments were at all accurate, the question arises as to how the 12 children shown in columns 4 and 5 were able to progress from over-age to normal despite their apparent mental handicap.

Table XXVI, below, shows the distribution by intelligence quotient and teachers' judgments of the 192 children who were not over-age at the time they entered sight-saving classes, but who were over-age at the time of this study.

TABLE XXVI

DISTRIBUTION BY INTELLIGENCE QUOTIENTS AND TEACHERS' JUDGMENTS OF 192 CHILDREN NOT OVER-AGE WHEN THEY ENTERED SIGHT-SAVING CLASSES, BUT OVER-AGE AT THE TIME OF THIS STUDY

COLUMN	1	2	3	4	5	6	7
Intelligence Quotients.	110–120	90–110	80–90	70–80	Below 70	Not Given	Total
Number of Children..	1	10	11	22	12	0	56
Teachers' Judgments.	Superior	Good	Fair	Poor	Deficient	Not Given	Total
Number of Children..	5	34	45	33	13	6	136
					Grand Total		192

The 192 children in Table XXVI moved from normal to over-age while in sight-saving classes. Adding the figures in columns 1 and 2, it can be seen that 50, or 26.0 per cent, of these children either had intelligence quotients above 90, or were rated

good, or better, by these teachers. If the intelligence quotients and teachers' judgments were at all accurate, the question arises as to why these 50 children with at least average mentality have become over-age in special classes organized to educate them as well as conserve their vision.

Adding the figures in columns 4 and 5, it can be noted that 80, or 41.6 per cent, of the 192 children had intelligence quotients below 80, or were rated poor or deficient by their teachers. If the intelligence quotients and teachers' judgments were accurate for these 80 children, it can be understood why they failed to progress even with the special attention the sight-saving classes were organized to give. There is some question as to whether or not the 25 children recorded in column 5 should be in sight-saving classes. If careful psychological examinations showed them to be mentally deficient, they might have been more suitably placed in another type of special class, if such class had been available.

TABLE XXVII

SUMMARIES OF AGE-GRADE TABULATIONS FOR CERTAIN COMMUNITIES

COMMUNITIES	NO. OF PUPILS	AT THE TIME OF ENTERING SIGHT-SAVING CLASS						AT THE TIME OF THIS SURVEY					
		UNDER-AGE	NORMAL	OVER-AGE	PER CENT UNDER-AGE	PER CENT NORMAL	PER CENT OVER-AGE	UNDER-AGE	NORMAL	OVER-AGE	PER CENT UNDER-AGE	PER CENT NORMAL	PER CENT OVER-AGE
Philadelphia	106	9	46	51	8.5	43.4	48.1	3	48	55	2.8	45.3	51.9
Boston	93	16	53	24	18.2	56.9	25.8	19	46	28	20.4	49.5	30.1
Detroit	235	13	152	70	5.5	64.7	29.8	18	135	82	7.7	57.4	34.9
Grand Rapids	78	5	46	27	6.4	58.9	34.6	1	50	27	1.3	64.1	34.6
Minneapolis	66	2	48	16	3.0	72.7	24.3	3	48	15	4.6	72.7	22.7
Chicago	180	11	91	78	6.1	50.6	43.3	11	83	86	6.1	46.1	47.7
New York	1,013	94	657	262	9.3	64.8	25.9	76	607	330	7.5	59.9	32.6
Los Angeles	55	2	31	22	3.6	56.4	40.0	3	31	21	5.5	56.3	38.2
All others	187	16	95	76	8.6	50.8	40.6	11	92	84	5.9	49.2	44.9
Total	2,013	168	1,219	626	8.3	60.8	30.9	145	1,140	728	7.2	56.6	36.2

20. *Variations in Age-Grade Changes for Certain Different Communities*

The numbers and percentages of children in the under-age, normal and over-age groups, at the time of entrance into sight-saving classes, and at the time of this survey, varied considerably

in different communities. Table XXVII shows these variations. The cities shown in the table had 50 or more children enrolled in sight-saving classes. The children included in the age-grade tabulations, who were in classes elsewhere than these eight cities, are designated in the table as "All Others."

In Minneapolis, the percentage of over-ageness decreased after the children entered sight-saving classes, from 24.3 per cent to 22.7 per cent.

In Los Angeles it decreased from 40.0 per cent to 38.2 per cent.

In Grand Rapids, it remained the same. In all other cases the over-ageness increased. The amount of increase varied from 3.7 per cent in Philadelphia to 6.7 per cent in New York City.

21. *Promotion Rates for 2,013 Children in Sight-Saving Classes*

According to the Age-Grade Tabulation Table XXIII, page 71, there were 1,387 children either normal or under-age at the time they entered sight-saving classes. From the time they entered, until the time of the present study, these 1,387 children had an aggregate of 6,616 promotion opportunities.* They were promoted an aggregate of 5,836 times. This is a promotion rate of 88.2 per cent. The 622 children who were over-age at the time they entered sight-saving classes had an aggregate of 2,693 promotion opportunities after entering these special classes. This is a promotion rate of 86.9 per cent. The entire 2,013 children included in the age-grade study had 9,309 promotion opportunities, while in sight-saving classes, up to the time this study was made. They were successful in 8,197 cases for a promotion rate of 87.8 per cent. This promotion rate compares very favorably with the 86.7 per cent recorded for all grades in the city of Philadelphia in 1928.†

22. *Comparison of Promotion Rates Before and Since Entering Sight-Saving Classes for 155 Children*

Unfortunately, the date of entering school for the first time was not obtained for all the children included in this study. Had this

* One promotion opportunity was recorded for each regular annual or semi-annual promotion date each child had been on roll in a sight-saving class from the time he entered until the date on which his child information sheet was received.

† *Annual Report* of the Superintendent of Public Schools of the City of Philadelphia, 1928 (12).

information been secured, it would have been possible to calculate the promotion rate for the sight-saving pupils in regular grades before they entered sight-saving classes. On the revised child information sheet, which was used only for the Chicago classes, the date on which children entered school was one of the items. In Chicago, 155 children in sight-saving classes had 861 promotion opportunities in regular grades before entering sight-saving classes. They were promoted 629 times, a promotion rate of 73.1 per cent. The same 155 pupils from the time they entered sight-saving classes until the time of this study had 791 promotion opportunities and were successful in 696, or 87.9 per cent of them. For these 155 children, then, the promotion rate while in sight-saving classes increased 14.8 per cent over the rate for the same children during the time they were in regular grades. The number of promotion opportunities in regular grades was 67 more than the number in sight-saving classes.

23. *Best and Poorest Subjects of Sight-Saving Pupils*

The question as to whether or not visually handicapped children were better in some subjects than others was responsible for requesting teachers to state each child's best and poorest subject. Thirty-two (32) different subjects were included in the number rated by the teachers as the "best." Twenty-nine (29) different subjects were included in the number rated as the "poorest."

The following subjects were mentioned as Best and Poorest more than 100 times:

Arithmetic, Reading, Spelling, English, History, and Geography. These six subjects were recorded as the best for 2,404 children, and as poorest for 2,186 children. Percentages used in Table XXVIII are based on these two figures.

The six subjects are listed in Table XXVIII according to the frequencies with which they were mentioned as the best. The table shows that the same relative order holds true for the same subjects mentioned as poorest, with the exceptions of Spelling and English, which exchange places in the ranking according to subjects rated as poorest. Spelling and English vary but one per cent in the number of times they were mentioned as the poorest subjects.

According to the last column in Table XXVIII, the greatest

TABLE XXVIII

BEST AND POOREST SUBJECTS OF CERTAIN SIGHT-SAVING CLASS PUPILS

SUBJECTS	NUMBER FOR WHOM EACH SUBJECT WAS RATED AS BEING THE CHILD'S BEST	NUMBER FOR WHOM EACH SUBJECT WAS RATED AS BEING THE CHILD'S POOREST	PERCENTAGE FOR WHOM EACH SUBJECT WAS RATED AS EACH CHILD'S BEST	PERCENTAGE FOR WHOM EACH SUBJECT WAS RATED AS EACH CHILD'S POOREST	VARIATION IN PERCENTAGES
Arithmetic	932	756	38.7	34.6	−4.1
Reading	511	418	21.3	19.1	−2.2
Spelling	342	322	14.2	14.7	.5
English	334	343	13.9	15.7	1.8
History	178	177	7.4	8.1	.7
Geography	107	170	4.5	7.8	3.3
Total	2,404	2,186	100.0	100.0	

variation in percentage was in the case of Arithmetic, which was mentioned as the best subject in 4.1 per cent more cases than it was mentioned as the poorest subject. All the variations in percentage are small. Since the ranking is so nearly alike, and since the variations are so small, it appears that children in sight-saving classes were rated almost equally well and poorly in these six most frequently-mentioned subjects. There was then no subject in which these children were rated better than in others without having an almost equal percentage of children rated poorly in the same subject.

24. *Home Visits Recorded for 2,772 Children*

Of 2,772 children, 1,248, or 45.0 per cent, were recorded as having been visited by the sight-saving class teacher. It is an accepted fact that a visit to a child's home will give the teacher a better understanding of the child. The fact that almost half of the children had been visited by teachers, added considerably to the competence of the teachers' judgments concerning their children.

25. *Distribution of 2,828 Children According to Teachers' Judgments as to the Financial Status of the Children's Families*

The distribution of the 2,828 children, according to the financial status of their families, is shown in Table XXIX.

TABLE XXIX

2,828 Children Grouped According to Family Financial Status

FINANCIAL GROUPING	WEALTHY	BETTER THAN AVERAGE	AVERAGE	LESS THAN AVERAGE	POOR	IN POVERTY	TOTAL
Number	7	248	1,284	645	549	95	2,828
Percentage	.2	8.8	45.4	22.8	19.4	3.4	100.0

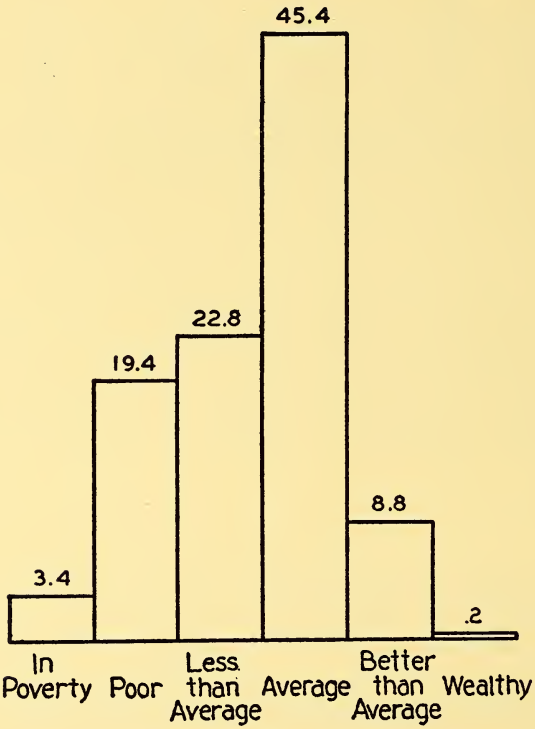

Fig. 5. Financial Status of the Families of 2,828 Children

A more graphic picture of the conditions revealed in Table XXIX is presented in Figure 5.

Based solely on teachers' opinions, Figure 5 indicates that children enrolled in sight-saving classes came, for the most part, from

families of average or less than average financial status. The percentage above average was relatively small.

26. *Number of Families of Sight-Saving Pupils Aided by Social or Charitable Organizations*

The families of 292, or 13.3 per cent, of 2,680 children were recorded as having been aided by social or charitable organizations. In Table XXIX, it was shown that according to teachers' judgments, 19.4 per cent of the children came from families rated as financially poor and 3.4 per cent rated "in poverty." The 13.3 per cent who had received aid from social or charitable organizations, were among the 22.8 per cent recorded in the two categories mentioned above. The aid received may have ranged from providing glasses, to making complete provision for the care of the child. Because of the possible wide variation in the aid that had been given, no conclusions can be drawn from these data.

27. *Miscellaneous Items*

The data recorded by teachers under this heading were so varied that it was not possible to make compilations. They did, however, help to give the impression that teachers were very well acquainted with the children in their classes.

IV

Training and Experience of Sight-Saving Teachers

1. *Introduction*

Teacher Information Sheets were received from 206 classes shown in Table IX, page 41. Sheets were not received from the seven teachers in Minneapolis. In addition to the 206 teachers' sheets, 14 were received from Cleveland, Ohio, making a grand total of 220. The supervisor of the classes in Minneapolis forwarded several items of information concerning his seven teachers, so that in some cases data were available for 227, or 77.7 per cent, of 292 sight-saving teachers at the time this survey was made. With this large percentage of teachers represented, the results obtained may well be considered typical.

2. *Training of 227 Sight-Saving Teachers*

Of 227 teachers, 211, or 92.9 per cent, were college or normal school graduates. Of these 211, there were 44 college graduates and 167 normal school graduates. Of the 183 teachers who were not college graduates, 153 had taken college courses. On the original Teacher Information Sheet, teachers had been requested to state the amount of college work they had done, by giving the number of semester-hours credit. The information given under this heading was found to be of little practical value in estimating teacher training. It was, therefore, omitted from the blank forms sent to Chicago, Cleveland and Philadelphia. The only fact gathered from the data collected, was that 153, or 84.7 per cent of the 183 non-college graduates had taken some college courses. Of the 227 teachers, 178, or 78.4 per cent, stated that they had taken courses dealing specifically with sight-saving class work.

3. *Institutions at Which Teachers Had Taken Sight-Saving Courses*

The following twelve Institutions were given as the places where the 178 teachers had taken courses dealing specifically with sight-saving work: University of Chicago, University of Cincinnati,

Cleveland School of Education, Columbia University, Detroit Teachers' College, Harvard University, New York University, Peabody College, Perkins Institute, University of Pennsylvania, University of Southern California, and Western Reserve University.

Teachers had also taken sight-saving courses in Boston, under the state supervisor; in Grand Rapids, Los Angeles and Minneapolis under the city supervisors.

From the facts recorded up to this point, it can be stated that the typical sight-saving teacher is a college or normal school graduate who has taken at least one course dealing specifically with sight-saving class work.

4. *Length of Service of 216 Teachers in Sight-Saving Classes*

The length of service for 216 sight-saving teachers is recorded in Table XXX.

TABLE XXX

LENGTH OF SERVICE IN SIGHT-SAVING CLASSES OF 216 TEACHERS

YEARS OF SERVICE	LESS THAN 1 YR.	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
Teachers....	32	34	25	21	21	19	20	11	10	11	7	1	4	216

The median length of service in sight-saving classes was 2.8 years. Naturally, one element influencing the possible length of service in sight-saving classes was the length of time sight-saving classes have been organized. Half the 292 classes at the time this survey was made had been organized less than five years.

5. *Years of Teaching Experience of 210 Teachers Prior to Appointment to Sight-Saving Positions*

The years of teaching experience of 210 teachers, prior to their appointment to sight-saving class positions, is shown in Table XXXI.

From Table XXXI it can be seen that the range was from less than a year to more than 30 years. The median length of teaching experience prior to teaching in sight-saving class was 9.8 years.

TABLE XXXI

YEARS OF TEACHING SERVICE PRIOR TO SIGHT-SAVING CLASS TEACHING OF 201 TEACHERS

YEARS OF SERVICE	NUMBER OF TEACHERS	YEARS OF SERVICE	NUMBER OF TEACHERS
Less than one year	6	16	6
1	3	17	8
2	9	18	4
3	12	19	2
4	11	20	4
5	8	21	2
6	11	22	5
7	11	23	5
8	7	24	2
9	10	25	0
10	21	26	0
11	7	27	0
12	13	28	2
13	7	29	0
14	9	30	1
15	12	More than 30	3
		Total	201

6. *Teaching Experience in Other Types of Special Classes*

Of 217 sight-saving teachers, 24.9 per cent, or 54, had taught in other types of special classes previous to teaching in sight-saving classes. A number of these teachers taught in two or more such classes. The types of special classes and the number of teachers who had taught in each appears in the following Table XXXII.

It would be difficult to state just how valuable the experience gained in teaching other special classes was to teachers in sight-saving class work. Most of the classes listed in Table XXXII are of a type which requires individual instruction. From the names given to the classes, there is little to indicate that experience in them would be of any special value to a sight-saving teacher. Twelve of the 54 teachers had taught in Blind and Braille Classes. It should be noted in this connection, that sight-saving class teaching is probably just as different from teaching in blind classes as it is from teaching any of the other special classes.

Since 163, or 75.1 per cent, of the 217 teachers had no experience in other special classes but had had previous teaching experience, it follows that this previous teaching experience had been in regu-

TABLE XXXII

OTHER TYPES OF SPECIAL CLASSES TAUGHT BY 54 SIGHT-SAVING TEACHERS

TYPE OF CLASS	NUMBER OF TEACHERS	TYPE OF CLASS	NUMBER OF TEACHERS
Orthogenic Backward	2	Anæmic, Heart, Bedside	1
Subnormal	3	Private Class: Nervous	
Subnormal Opportunity	1	Normals	1
Retarded	1	Emigrant	2
Ungraded	4	Americanization	1
Opportunity	3	Non-English Speaking	2
Foreign, Ungraded	1	Opportunity, Demonstration	1
Ungraded, Subnormal	1	Blind	9
Average Steamer, Americanization	1	Braille	3
Special Low I. Q.'s Hospital	1	Kindergarten	2
Continuation	1	Delinquents	1
Deaf Mutes, Steamer	1	Disabled Soldiers	1
Open Air	4	Industrial Class	1
Cardiac	1	Foreign, Blind	1
Health	1		
Crippled	2	Total	54

lar grades. Thus, more than three-fourths of the 217 sight-saving class teachers had been recruited from the regular grades.

7. *Courses Taken by 128 Teachers Dealing with Any Special Class Work*

In addition to asking for information concerning the number of courses teachers had taken dealing specifically with sight-saving class work, a request was made for data concerning courses dealing with special class work in general. It was stated on page 82 that 178 teachers had taken special sight-saving courses. One hundred twenty-eight (128) teachers stated that in addition they had taken 43 courses dealing with special class work. The courses are listed in Table XXXIII.

Since some teachers had taken more than one course, the total number of teachers taking all the courses is greater than the actual number of teachers.

It was not part of this study to evaluate the various courses taken. Judging from the titles alone, the list given in Table XXXIII seems to be one which would give considerable aid to teachers of sight-saving classes. One hundred twenty-eight (128), or 58.2 per cent, of the 220 teachers took one or more of these courses.

TABLE XXXIII

COURSES TAKEN BY 128 TEACHERS DEALING WITH SPECIAL CLASSES IN GENERAL

COURSE	NO. OF TEACHERS TAKING EACH COURSE
Psychology	18
Abnormal Psychology	7
Child Psychology	4
Psychology of the Exceptional Child	1
Teaching Handicapped Children	2
Sub- and Super-Normal Children	1
Education of the Exceptional Child	9
Study of Atypical Children	1
The Adolescent Child	1
Unusual and Difficult Children	1
Methods of Teaching Ungraded Classes	1
Special Class Methods	7
Project Method	2
Special Physical Education for Handicapped Children	34
Social Service	11
Mental Hygiene	6
Health Education	6
Primary Methods	3
Foundation of Method	1
Visual Education	1
Primary and Kindergarten Method	1
Organization, Supervision and Management of Special Classes	1
Character Education	2
Psychiatry	1
Diet and Nutrition	1
Philosophy of Education	1
Sociology	1
Manual Training	3
Industrial Art	8
Handwork for Handicapped Children	29
Poster Making	1
Lettering	1
Basketry	8
Cooking	2
Sewing	2
Typing	32
Arts and Crafts	2
Handicraft for Young Children	1
Weaving	2
Rug Weaving	1
Swimming	1
Folk Dancing	1
Total	219

8. *Grades in Which 209 Teachers Had Had Some Teaching Experience*

Two hundred nine (209) teachers stated that they had had experience in teaching in the following grades, as indicated in Table XXXIV.

TABLE XXXIV

GRADES IN WHICH 209 TEACHERS HAD TAUGHT

GRADES	NUMBER OF TEACHERS WHO HAD TAUGHT EACH GRADE
Kindergarten	3
1	136
2	153
3	152
4	151
5	143
6	130
7	92
8	76
9	20
10	6
11	4
12	4

It can be noted, from Table XXXIV, that most of the experience had been in the first six grades. Of the 2,800 sight-saving children, 2,131, or 76.1 per cent, were enrolled in the first six grades at the time this survey was made.

9. *Number of Different Grades in Which 209 Sight-Saving Teachers Had Taught*

Table XIX, page 67, showed the number of children of different grades enrolled in each sight-saving class. Sight-saving teachers had to be familiar with the work of from two to twelve grades. The number of different grades in which teachers had taught prior to teaching sight-saving classes may be seen by examining Table XXXV.

TABLE XXXV

NUMBER OF DIFFERENT GRADES TAUGHT BY 209 TEACHERS

NO. OF DIFFERENT GRADES TAUGHT	0	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
No. of Teachers	6	5	18	31	34	24	26	11	42	10	1	0	1	209

Six teachers had had no previous grade-teaching experience. One teacher had had experience in twelve different grades. The median number of different grades taught was 5.4.

V

A Brief Summary of the Survey

The main purpose of a survey is to present a picture of conditions as they existed at the time the survey was made. Such a picture is naturally limited to the items surveyed.

For certain items, the recording of ascertained facts was all that was possible due to the nature of those items. Other items led to certain conclusions. Still others simply gave rise to questions which could only be answered after further investigation.

Sight-saving classes were an outgrowth of the problem of educating children who were not blind, but possessed too little vision to profit by the traditional school procedure. The movement began in England, where a "myope class" was organized in 1907. The movement spread to America, where the first class was established in Boston, in 1913. A class was established in Cleveland the same year. From this beginning there was a rather rapid growth. In December, 1928, there were 319 classes in 87 communities in 21 states.

The purposes or aims of these special classes were found to be to provide schooling for visually handicapped children with the least possible harm to their impaired vision, and to assist them in taking the places the fullest development of their capacities would permit.

A search of the literature of the blind and visually handicapped children and considerable correspondence failed to reveal any institutions, other than public school sight-saving classes, that were established to educate children not blind, but seriously handicapped visually. As stated above, there were 319 sight-saving classes in the public schools of the United States in December, 1928. These classes were located in 21 states. No evidence was found that any such classes existed in the remaining 27 states and in the District of Columbia.

Based solely on the experience of the cities which appeared to have made the most careful study of the problem of visually handicapped children, it was found that authorities differed concerning the probable number of these children which might be expected in any school system. The two most commonly expressed ratios of

sight-saving children to total school enrollment were 1 to 500 and 1 to 1000. These ratios mean the same as one class of 16 children to each 8,000 children, and one class of 16 children to each 16,000 children, respectively. Using either of these ratios, it was discovered that the 21 states and 87 local communities in which sight-saving classes were established, varied greatly with regard to the number of classes they had established. Local conditions might explain these variations somewhat, but they were so great that it is safe to conclude that certain communities had gone much further than others in the establishment of these special classes.

There were sight-saving classes in but 15 communities of less than 30,000 population. There seems to be little doubt as to the inadequacy of sight-saving class provisions in rural communities, with the exception of the State of Ohio in which 11 of the 15 communities, referred to above, were located.

Standards for the admission of children to sight-saving classes varied greatly in various communities having such classes. Standards determined by various ophthalmologists were rather uniform. The establishment of a minimum uniform standard of admission might well be considered by the authorities in charge of this field of educational work for handicapped children.

The typical procedures in locating prospective sight-saving class pupils were of such a nature as often to place the responsibility for the detection of serious eye defects upon persons who were not eye experts. While teachers, nurses and school physicians were able to single out eye defects which were rather easily detected, it is probably true that an ophthalmologist or oculist would have been of great service in discovering less apparent serious eye conditions. In numerous school systems, the services of eye experts were available. It is undoubtedly desirable that the services of such experts should become more widespread.

Based on the opinion of teachers, sight-saving class children seemed to present no great variation from a normal distribution in the matter of general health. The distribution was somewhat skewed toward the better health side.

The four most frequently mentioned eye defects were myopia, hyperopia, nystagmus and astigmatism. Myopia, with combina-

tions of other defects, comprised 38.9 per cent of all the defects. Since a scientific study of the facts shown in the long list of eye defects would require the technical knowledge of an ophthalmologist, it was felt that the survey had served its purpose, when it brought together in one table the eye defects.

If the glasses worn by the children in sight-saving classes were correct, it was shown that all but 4.3 per cent of the children who could profit by their use were receiving the benefit of them. It is doubtful whether a similarly large proportion of children with defective vision outside of sight-saving classes have been as well taken care of as far as the use of glasses is concerned. In addition to the aims generally claimed for sight-saving classes, the large percentage of their enrollment which had been fitted with glasses might be noted as a point in their favor.

Over 90 per cent of the children who had received two vision tests were shown to have had the same or better vision at the time of the second test. What similar retesting would have shown had the children remained in regular grades could not, of course, be determined. For certain eye conditions, diminishing vision cannot be prevented. But 9.4 per cent of the children had poorer vision when retested. The facts presented in the survey showed that for more than 90 per cent of the children, vision had been conserved or improved. It seems fair to assume that a large part of this rather excellent record was due, in part at least, to the special provision made in sight-saving classes.

Intelligence quotients for 709 children and teachers' judgments as to mentality for 1,986 children gave conflicting pictures of the mental conditions of the children enrolled in these special classes. Both measures were rather questionable as to reliability. The 709 children for whom intelligence quotients had been recorded, presented a distribution considerably below normal, while according to the estimates of their teachers, the 1,986 children presented a distribution somewhat skewed toward the better mentality side. Due to the unreliability of the data and to the conflicting pictures shown by the two criteria, no general conclusion could be drawn as to the mentality of the group of children as a whole.

Half the pupils had been enrolled in sight-saving classes before reaching the age of 9 years and 5 months and before completing

the third grade. Considering the difficulties arising from the problem of transportation, and from the fact that certain serious eye defects may not develop until a comparatively late date in a child's life, the enrollment of these children at such an early stage in their school lives seemed to speak well for the efficiency of the persons whose duty it was to locate and place them in these special classes.

In 158 classes in which promotions were made semi-annually, the approximate median number of children per class was 15, and the approximate median number of grades represented in each class was seven. Even in classes where the teachers were only responsible for the subjects requiring close eye work, the classes and number of different grades were so large as to give rise to the question of the capacity of teachers to instruct so many children in so many different grades of work.

Similar conditions were found in the classes in which promotions were made annually, although the size of the classes and the number of grades were smaller.

The medians for the number of children and number of grades per class exceeded the standards set by law in the State of Ohio, which ranks high in sight-saving class work.

Throughout the United States, there were children enrolled in sight-saving classes in every grade from the kindergarten to the twelfth. Sixty per cent of the children, at the time of the survey, were enrolled in grades three, four, five and six.

An aggregate attendance of 7,524 years in regular grades had developed 31.1 per cent over-ageness among 2,013 children. In an aggregate of 6,317 years or 83.9 per cent of the time, they had been in regular grades, the same 2,013 children had developed an additional 5.1 per cent over-ageness. Since the time spent in sight-saving classes so nearly approached the time that had been spent in regular grades, the increase in over-ageness was comparatively slight. Had these children remained in regular grades, it is probable that the percentage of over-ageness would have increased a great deal more, judging by their past records.

Two groups of children were responsible for the change in percentage of over-ageness; those who had changed from over-age to normal and those who had changed from normal to over-age. For the most part, the former group rated close to normal, or better

than normal mentally. In this group, 13.3 per cent of the children were rated below 80 I. Q., or poor or worse according to the teachers' estimates. There is a question as to how this 13.3 per cent of low mentality were able to progress sufficiently to cease being over-age.

Of the 192 children who became over-age while in sight-saving classes, 41.6 per cent had intelligence quotients below 80, or were rated poor or deficient by teachers. It can be understood how children with the double handicap of low mentality and defective vision would fail to progress even with the provisions of special class instruction. Of these children 26.0 per cent had intelligence quotients above 90 or were rated good or better by teachers. There is a question as to why these children, with mentalities fair or better, became over-age despite the provisions made for their defective vision in these classes.

In three cities, Grand Rapids, Minneapolis and Los Angeles, whose sight-saving enrollments included in the age-grade tabulation represented 9.9 per cent of the total of 2,013 children, over-ageness decreased or remained the same during the time they were in sight-saving classes. Over-ageness increased for all the remaining 90.1 per cent. The percentage of increase varied somewhat in different communities. The greatest variation was 3 per cent. The tendency toward an increase in over-ageness appears to be rather general for most of the sight-saving classes. As stated above, this increase was not as great as would be expected from the records these children had made in regular grades.

Between the time they entered sight-saving classes, and the time of this survey, 2,013 children had a promotion rate of 87.8 per cent. This compared very favorably with the promotion rate for regular grades in Philadelphia for the year ending June 30, 1928.

In Chicago, 155 children, whose promotion rate, while in regular grades had been 73.1 per cent, had, while in sight-saving classes, a promotion rate of 87.9 per cent. This indicates a decided improvement in school progress for these children.

The variations in the percentages of times the six most frequently mentioned school subjects were rated as "best" and "poorest," were small. This variation was greatest in arithmetic, which was mentioned as the best subject in 4.1 per cent more cases than

it was mentioned as the poorest subject. Reading was mentioned as the best subject in 2.2 per cent more cases than it was mentioned as the poorest subject. This might be surprising, were it not for the fact that in general, sight-saving class children are provided with books printed in large or "clear" type. No subject seemed to have been peculiarly easy or difficult for children in sight-saving classes.

The distribution of families according to their financial status was skewed considerably toward the "poorer" side. But 9 per cent were rated as "better than average" or "wealthy." Since all the children who should have been in sight-saving classes were not in them, no general conclusions can be drawn. From the teachers' estimates of the families of children who were in these classes, it would appear that either the better than average and wealthy families had proportionately fewer children with serious eye defects, or that if they provided special educational facilities for them, it was elsewhere than in sight-saving classes.

The typical sight-saving class teacher was either a college or normal school graduate, who had taken at least one course of college grade, dealing specifically with sight-saving class work. In addition to these courses, more than half the teachers had taken an average of two college courses. The titles of these courses seemed to indicate that they would be of considerable value in the work of these special classes.

In general, the teachers had been recruited from the regular grades. The median length of experience in regular grades was 9.8 years and the median number of grades taught was five. This experience had been chiefly in the first six grades, the grades in which more than 76 per cent of the children were enrolled at the time this study was made.

From the facts presented in the survey, it seems reasonable to conclude that the teachers were, in general, an experienced group who had made considerable effort toward preparing themselves for the duties of teachers of children with serious visual handicaps.

A number of phases of this work with visually handicapped children present problems for further study. Studies of the question of costs, of equipment, of the most suitable type to use in books,

are but a few which would prove of interest and value to those engaged in this field of education and to educators in general.

The present study lays claim to having done no more than present a picture, national in scope, of certain conditions concerning sight-saving classes. From the correspondence with the teachers and supervisors of more than two-thirds of the classes in the United States, it was felt that such a survey was needed and would be of value. It is hoped that this survey has, at least partially, filled that need, and that it will prove of some value.

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APPENDIX

The APPENDIX exhibits the following copies of blank forms used in collecting the data discussed in Chapters IV and V.

A. Original Child Information Sheet—used in all cases with the exception of the Chicago sight-saving classes. It will be noted that the instructions for completing the form appear at the top of it.

B. Revised Child Information Sheet—used for the Chicago sight-saving classes. Instructions for completing this form were forwarded to each teacher on a separate sheet.

C. Original Teacher Information Sheet—usedfor all teachers except those in Chicago, Cleveland and Philadelphia.

D. Revised Teacher Information Sheet—used for the teachers in Chicago, Cleveland and Philadelphia.

APPENDIX A

Original Child Information Sheet

INSTRUCTIONS FOR COMPLETING INFORMATION SHEET

1. Complete an INFORMATION SHEET for each child on roll.
2. Write or print clearly in either PENCIL or INK.
3. Wherever it says "check" use (√) or encircle the true statement.
4. Give a complete statement of Eye Defect in Question I.
5. In question 12 any information you care to give will be appreciated.
6. Mail the completed INFORMATION SHEETS at your earliest convenience in the provided envelope.

(Child's Initials) Sex (check) Male Female Birth Record Month Day Year

Birth Place (Country) Child Father Mother

Race (check) White Negro Mongolian

Month Day Year Grade on entrance.....

Date of entry into Sight-saving Class..... Present Grade.....

---

1. The child's specific Eye Defect is.....
2. State any other serious physical handicap.....
3. The child's general health is (check) Excellent.....Good.....Fair..... Poor.....
4. The child wears glasses (check) Yes.....No..... Has doctor stated that glasses would not improve vision (check) Yes.....No.....
5. State child's best subject.....poorest.....
6. Child has been given a Psychological examination (check) Yes.....No..... If "Yes" the I. Q. is..... If "No" in your opinion the child is mentally (check) superior.....good.....fair.....poor.....deficient.....
7. Have you ever visited the child's home. (check) Yes.....No.....
8. Classify the family as (check) Wealthy.....Better than Average..... Average.....Less than Average.....Poor.....In Poverty.....
9. Child's family is being aided by a Social or Charitable Organization (check) Yes.....No.....
10. Child's vision on entering Sight-Saving Class was Left Eye..... Right Eye..... Month Day Year
11. Child's vision was last tested on..... In this examination his vision was Right Eye..... Left Eye.....
12. Give any additional facts you consider significant (Use other side if necessary):

APPENDIX B

Revised Child Information Sheet

Pupil Information

(Child's Initials).....

1. (check) Boy.....Girl.....(2) Race (check) White.....Negro .....Mongolian.....
3. Birth Place (Country) Child.....Father.....Mother.....
4. Date of Birth..... Month Day Year
5. Date Began School.....
6. Date Entered Sight-saving Class
7. Grade on Entering Sight-saving Class
8. Present Grade (Beginning of Spring Term, 1929)
9. Child's Specific Eye Defect is.....
10. Has the Child any Other Serious Physical Handicap (check) Yes..... No.....
11. The Child's General Health is (check) Excellent.....Good..... Fair.....Poor.....
12. State Child's Best Subject.....Poorest.....
13. Has Child Been Given a Psychological Examination (check) Yes..... No.....
14. Child's I. Q. is.....
15. If Child has not been Examined in Your Opinion Child Mentally is (check) Superior.....Good.....Fair.....Poor.....Deficient.....
16. Have You Visited Child's Home (check) Yes.....No.....
17. Classify Financial Condition of Family as (check) Wealthy.....Better than Average.....Average.....Less than Average.....Poor..... .....in Poverty.....
18. Family is being Aided by a Social or Charitable Organization (check) Yes..... No.....
19. Child's Degree of Vision on Entering Sight-saving Class (with correction) Right Eye..... Left Eye..... or Both.....
20. Vision Last Tested Month.....Year.....
21. In this Last Examination Degree of Vision (with corrections) Was Right Eye..... Left Eye ..... or Both
22. Give any Additional Facts You Consider Significant (Use other side if necessary)

.....

APPENDIX C

Original Teacher Information Sheet

Name.....
(First Name) (Last Name)

1. Are you a Normal School graduate. (check) YES....No....Length of Course (check) Yrs. 1 2 3 4
2. The NORMAL SCHOOL was named.....located at.....State .....
3. Are you a college graduate. (check) YES.....No.....WHAT Degree.....
   College.....
4. If not a college graduate, have you taken any college courses (check) Yes.....
   No.....
5. How many semester hours credit (1 semester hour credit is equal to 1 hour per week for ½ year) do you have.....
6. List below any course you have taken that dealt SPECIFICALLY with Sight-Saving Class Work.

   Course Place given

   1.....
   2.....
   3.....

7. List any course you have taken dealing with any Special Class Work other than Sight-Saving:
   1.....
   2.....
8. How long have you been teaching in Sight-Saving Classes (as of Feb. 1, 1928)
   Years.....Months.....
9. Have you taught any other Special Classes. (check) YES.....No.....
10. If "YES" please list the positions held.

    Type of Class Taught Length of Time

    1.....
    2.....
    3.....

11. How long had you been teaching prior to your appointment to your position as Sight-Saving Teacher.....years.
12. Please list the Grades in which you have taught.....
13. In what Year was your present Sight-Saving Class organized.....
14. Any other information you may care to give (Use other side if necessary)
    .....
    .....
    .....

APPENDIX D

Revised Teacher Information Sheet

1. Are you a Normal School Graduate. (check) Yes.....No.....
2. Are you a College Graduate. (check) Yes.....No.....What Degree.....
3. If not a College Graduate have you taken any College Work. Yes..... No.....
4. List any Courses you have taken Dealing with Special Class Work:
   .....
   .....
   .....
   .....
5. How Long have you been Teaching in Sight-Saving Classes (as of Feb. 1, 1929). Years.....Months.....
6. Have you Taught in any other Special Classes (check) Yes.....No.....
7. List Such Positions (if any)
   .....
   .....
   .....
   .....
8. How Long had you been Teaching Before your Appointment as Sight-Saving Teacher.....Years.
9. List the Grades in which you had Taught.....
10. In What Year was your Present Sight-Saving Class Organized.....
11. Any Other Information Concerning your Training and Experience (Use other side if necessary):
    .....
    .....
    .....
    .....

ADDENDA

Child Information Sheets for 263 pupils of the Cleveland sight-saving classes were received too late to be incorporated in the survey. As this study was an attempt to present in one volume as great a fund of information as possible, the data for these children were compiled and presented in the following Addenda. They are presented in practically the same order as was used in Chapter III.

Of 260 pupils, 148, or 56.9 per cent, were boys, and 112, or 43.1 per cent, were girls.

Of 238 children, 195, or 81.9 per cent, were white, and 43, or 18.1 per cent, were Negro.

Birthplaces were recorded for 218 children. Of these 210, or 96.3 per cent, had been born in the United States. The other eight birthplaces were Italy, two; Roumania, one; England, two; Germany, two; and Ireland, one.

Of the 211 fathers, 89, or 42.2 per cent were native born; 91, or 43.1 per cent were born in the following countries: Russia, 29; Italy, 26; Hungary, 11; Austria, 15; and Germany, 10. The remaining 31, or 14.7 per cent, were born in 11 other nations.

Of the 211 mothers, 95, or 45.0 per cent, were native born; 83, or 39.4 per cent, were born in the following countries: Russia, 23; Italy, 25; Hungary, 14; Austria, 14; and Germany, seven. The remaining 33, or 15.6 per cent, were born in 12 other nations.

According to teachers' judgments regarding general health, 203 children were grouped as follows:

HEALTH GROUP	GOOD	FAIR	POOR	TOTAL
Number	158	38	7	203
Percentage	77.8	18.7	3.5	100.0

Of 216 pupils 172, or 79.6 per cent, were recorded as having no serious physical handicap other than eye defects.

The three most frequently mentioned eye defects, in order of frequency were: myopia, hyperopia and nystagmus. These three and combinations of them with other defects made up 176, or 67.2 per cent, of the entire number. Myopia and combinations of other defects comprised 45.0 per cent of the entire number.

There were 149 pupils whose visual acuity at two examination periods was comparable. Of them, 21, or 14.1 per cent, had improved vision, 112, or 75.2 per cent, had the same vision, and 16, or 10.8 per cent, had poorer vision at the time of the second examination.

Intelligence quotients were recorded for 261 children. They were distributed as follows:

I. Q.	120–140	110–120	90–110	80–90	70–80	50–70	TOTAL
Number.....	4	18	149	66	23	1	261
Percentage.....	1.5	6.9	57.1	25.3	8.8	.4	100.0

The following is a classification of 263 pupils according to ages at the time they entered sight-saving classes, and on January 31, 1929:

AGES	AT ENTRANCE	JAN. 31, 1929	AGES	AT ENTRANCE	JAN 31, 1929
5 yrs. 6 mos.– 5 yrs. 11 mos.	2	4	12 yrs. 6 mos.–12 yrs. 11 mos.	7	13
6 " 0 " – 6 " 5 "	27	11	13 " 0 " –13 " 5 "	5	18
6 " 6 " – 6 " 11 "	25	5	13 " 6 " –13 " 11 "	0	11
7 " 0 " – 7 " 5 "	39	11	14 " 0 " –14 " 5 "	2	17
7 " 6 " – 7 " 11 "	24	10	14 " 6 " –14 " 11 "	1	10
8 " 0 " – 8 " 5 "	18	14	15 " 0 " –15 " 5 "	1	8
8 " 6 " – 8 " 11 "	24	12	15 " 6 " –15 " 11 "	0	6
9 " 0 " – 9 " 5 "	21	10	16 " 0 " –16 " 5 "	0	2
9 " 6 " – 9 " 11 "	14	13	16 " 6 " –16 " 11 "	0	3
10 " 0 " –10 " 5 "	16	16	17 " 0 " –17 " 5 "	0	3
10 " 6 " –10 " 11 "	14	12	17 " 6 " –17 " 11 "	0	0
11 " 0 " –11 " 5 "	6	23	18 " 0 " –18 " 5 "	0	1
11 " 6 " –11 " 11 "	12	12	Total.....	263	263
12 " 0 " –12 " 5 "	5	18			

The following is a classification of 263 children according to school grade at the time of entering sight-saving class and on January 31, 1929:

GRADES	1	2	3	4	5	6	7	8	9	10	11	NOT GIVEN	TOTAL
At Entrance.....	103	52	41	33	21	8	2	3	0	0	0	0	263
On Jan. 31, 1929.....	26	28	30	28	37	45	23	18	19	5	2	2	263

The length of time that 201 pupils have been enrolled in sight-saving classes was as follows:

Months:..... Years:.....	11 0–0	11 1–1	11 2–2	11 3–3	11 4–4	11 5–5	11 6–6	11 7–7	11 8–8	11 9–9	11 10–10	Total
Number:.....	32	33	40	32	16	17	10	9	8	3	1	201

There were 201 pupils enrolled in sight-saving classes long enough to have had one promotion opportunity. At the time they entered these classes, their age-grade status was as follows:

	NUMBER	PERCENTAGE
Under-age	4	2.0
Normal	161	80.1
Over-age	36	17.9

At the beginning of the Spring term, the situation was as follows:

	NUMBER	PERCENTAGE
Under-age	12	5.9
Normal	133	66.2
Over-age	56	27.9

Over-ageness had, therefore, increased 10.0 per cent while the children were enrolled in sight-saving classes. Before entering these classes, the 201 children had been in school an aggregate of 531 years, and had had 870 promotion opportunities. They had been successful on 647 occasions for a promotion percentage rate of 74.4. Since entering sight-saving classes they had been in school an aggregate of 672 years. and had had 1,382 promotion opportunities. They had been successful 1,282 times for a promotion percentage rate of 92.7 per cent. Thus, while over-ageness increased, the promotion rate, after entering sight-saving classes, was 18.3 per cent higher than before entrance.